

DE BOW'S REVIEW.

ESTABLISHED JANUARY, 1846.

MARCH, 1868.

ART. I.—COTTON CULTURE IN INDIA.

THE most remarkable period of financial depression and gloom which closed the year 1867, and which darkens the earlier days of 1868, has had the desirable effect of rousing the public mind, and of drawing attention, not only to the causes of this marked revolution, but to the promises of the future. What those promises may be it is difficult to foresee. Men who have long borne the reputation of particular shrewdness in this respect—close and judicious observers—now shake their heads whenever the subject is mentioned, and plainly confess that the future seems even more dark to them than the present. When the country is in this condition, there is just cause for serious apprehension. It is conceded that there was never a period in the history of the Republic when all business prospects wore so gloomy an aspect; and it is confidently asserted that none of the crises which have generally marked the years preceding the presidential election, could bear comparison to this, or began to equal it in widespread distress. The natural results of a ruinous financial policy are now developing themselves throughout the land. Men cannot ignore facts, however they may differ about the logic of them; and, tardily, to be sure, the eyes of Northern men are being opened to both now that Northern pockets are in danger. Hitherto, the Northern mind has bestowed but little reflection upon great public questions affecting industry and material development; because, in the midst of comparative prosperity themselves, the business men of that section could not feel the burthens that were weighing down the South, and would not pause to think how those burthens might produce a crisis that would ultimately make itself felt from one end of the country to the other. Perhaps they did not reflect that trade and commerce, the greatest tie of amity between nations, was also the strongest ingredient in the national cement—a bond of union more powerful in the end than bayonets. In

former years, the failure of the cotton and sugar crops of Texas and Louisiana, causing distress among planters and laborers in those States, reflected disaster upon the manufacturing interests of New England, and caused distress amongst the laboring classes there. And even now, a great crisis in the "5th Military District" must, sooner or later, so intimately are the military provinces connected with the States, have a serious effect upon other sections of the Union. It is evident that only a few Northern men reflected upon this apparent dependence of one section upon another. Party leaders have ignored it for the purpose of political ascendancy in the South, and put party domination above all agricultural or monetary interests. This led them into the policy of Michaelvelli, the ground-work of which is to "first ruin the province you would hold;" and, without thinking whither it would tend, the masses of the North were made to support a party, the policy of which was sure to ruin the South, industrially and financially. To use a commonplace comparison, they looked away when the wolf was busy with their neighbor's fold, and gave no heed to the notes of alarm until he was howling at their own doors. But at length we find the Northern mind in a state of agitation, while the more intelligent business men are trying to look beyond the present political movements for the election of the next president, and to separate financial from party interests. Such men are urging upon Congress the immediate necessity of reparative legislation, and are suggesting various remedies for the improvement of business prospects; but the remedies, if any can be devised, will come too late to prevent a suspension, if not a partial destruction, of interests which have hitherto had a controlling influence in this country.

The unfortunate results of the policy pursued by Congress since the termination of the war, as seen in the general distress of this gloomy period, are now felt from Maine to Texas. And admitting the possibility of an immediate change of policy, what are the grounds for hope? The matter must have been already revolved sufficiently to convince a large majority that cotton culture in the South, and cotton spinning in New England, have seen their best days in the present generation, and that no amount of Congressional legislation or protection will make them profitable interests. In the South, the question comes up daily: "Can the cotton fields of the Gulf States be worked profitably, with the competition that has arisen in Africa, India, and other parts of the world?" In other words, is cotton an existing interest? Senator Sprague, of Rhode Island, himself a large planter, and still larger spinner, recently declared in the Senate chamber, to the surprise of his hearers, that while they

were prepared to legislate for an existing interest, he could assure them that the *real question* was, whether cotton is an "existing interest." And he was forced to the humiliating confession, that with the poor, despised, short-stapled, husky Indian cotton, a fabric is to-day produced, by the skill and labor of Englishmen, equal to the best fabric that American machinery has yet been able to make. Beyond this, even, Mr. Sprague feared that the fabrics manufactured from the cheap cotton would yet find their way into this country, and be consumed by the American people, to the detriment of American productions. What then, the Senator asks, would become of New England? And the question can be as pertinently asked of the South. With these words of introduction to show its importance on this side of the Atlantic, let us glance at the rise and growth of cotton culture in British India.

Ten years ago Indian cotton was considered very poor, and was despised by manufacturers for its short staple, its coarse fibre, and husky, dingy appearance. It was used to a limited extent, on account of its cheapness, to mix with other cottons in the manufacture of coarse goods; but its market value was not comparable to the ordinary uplands of America. In Africa, in Egypt and Algeria, a better quality of cotton was produced, but in too small quantities to have any great effect upon the market; while the staples of North and South America, and especially those of the Southern United States, were considered, by Englishmen even, beyond competition. The late war, however, showed the fallacy of this assumption, and we find to-day an improvement in Indian cotton culture, that even the wildest dreamer of ten years ago would scarcely have dared to predict. The Liverpool market reports show in what esteem it is now held; Mr. Sprague boldly declares its superiority to most American uplands; English manufacturers are generally using it, and British capitalists are investing largely in its culture as a profitable enterprise. At the same time we have reports from Africa still more fatal to the hopes of our cotton growers. Dr. Livingstone, an observing, reliable and scientific traveler, says, that he has seen cotton grown in Abyssinia, with a fibre as fine as silk, the mass as white as snow, and the fibre superior to any cotton he had ever examined, not excepting the justly famed sea-island cottons of the American coast. He saw vast tracts of territory, regions even, capable of raising, under the dominion of civilized man, this fine species of cotton. In India, also, the amount of land capable of raising cotton is enormous, and cultivation of those lands has clearly proven that the staple can be improved from year to year, and the yield per acre increased. In Africa, labor can be had for a sum too trifling to name—for

the gourds, perhaps, raised upon the plantation ; and in India, laborers have been worked successfully on wages not exceeding two-pence per day, or four cents of our money. And setting aside the price of labor, we find it well under the control of capital, as it must ever be to prove advantageous to any interest.

As we look at what the skilled labor of scientific men has done in developing the culture of this great staple, we can but wonder that, for so many years people failed to comprehend the logic of existing facts, now generally understood. It is evident that no great number of men really did consider them existing facts. If any knew, before the war, that cotton could be vastly improved by the cultivation of cotton lands, the idea did not prevail, for the Southern planters were accustomed to use these lands from year to year until well worn out, then abandon them for new fields. Nor was it supposed that cotton of a superior quality could be abundantly produced on the Eastern hemisphere. The deceptive cry of "cotton is king," with its meaning limited to the South, lulled all tendencies to inquiry, and the delusion was accepted without question, rendering a large majority of planters deaf to all arguments which militated with their pleasant sophism. The reason for this astonishing ignorance is probably found in the law of supply and demand. Being liberally supplied from America, the manufacturers of England saw no necessity for trying to extend cotton culture in the East, and were content to be dependent upon American planters. When this supply was cut off by the war, a fresh demand was created, and then, and then only, rose the necessity for raising cotton in the British dominions to an extent equal to the former supply, plus the usual American-crop. With the demand came mental activity and thought ; the public mind became interested ; man brought this experience and civilization to bear upon the question ; and in the end the skill, patience, energy and industry of the Circassian race was bound to prevail. Men had seen the potatoe—a Mexican bulb—transplanted to various parts of the world, improved by cultivation, and used as a favorite article of food. Other examples were not wanting ; but it took years, and a great war, to convince the world that superior cotton fibres could be grown successfully out of the Americas, and that, like the potatoe, the staple could be greatly improved by careful cultivation.

Although cotton is generally considered a native of Arabia, (hence its name, Arabic *katōn*.) it has always been put down as indigenous to both hemispheres, and all tropical regions. Indeed, from the earliest times of which we have such records, man has known that some species of cotton was found in every region beneath a tropical sun. The varieties exposed for sale in the

Liverpool market show the wide extent of its production, for we have staples from Bahia, Guiana, Brazil, Peru, Equador, Mexico, Central America, United States, on the Western hemisphere ; from Turkey, Egypt, Palestine, Bengal, Scinde, Onde, Madras, Calcutta—the whole of Hindostan, in fact—the East India Islands, Algeria, Abyssinia, China, Japan, the Bahamas ; including many varieties of which the names Sea Islands (a variety of the Bourbon or Egyptian,) Maranham, Maceio, and others, are examples. This shows to what extent cotton is cultivated on the face of the globe, and exposes the narrow views of those who once proclaimed the sophism above quoted, as well as of those legislators, who have more recently imposed heavy burthens upon the culture of cotton in the South, on account of its supposed importance to the world.

During the war the writer endeavored, not without success, to make his views of cotton growing in the South understood by the planters. At every step he was met by the objections of party leaders, who would listen to no arguments against their assertion that England must interfere to get her cotton, and who, when they saw their error, blamed and abused the British government as if it were responsible for their own short-sightedness. It made them even more ridiculous when the same men afterwards attempted to fasten upon England the responsibility of the war, charging the government with a secret and underhand policy intended to ruin the South, for the purpose of developing the cotton fields in her own possessions. As long as it were possible, England preferred to purchase her cotton from America ; for it was no trifling thing to stop for an indefinite period all her cotton manufacturers, throwing out of employ a million of operatives, uniting them in one sentiment of blind fury against law and order—the cry for bread. But when this state of things was forced upon her, she wisely remained neutral in the struggle, bore her own misfortunes caused thereby, and went bravely at the task of repairing the damage within her own dominions. No one then believed that Indian cotton could be made a substitute for the American, any more than it was believed in this country. There was some excuse for this idea on the part of the South, for even with Englishmen it was a leap in the dark that might prove disastrous to capital, and to law and order at home. But what shall we say of those men who, after the experiment had become a fact, and the success determined, legislated to aid still further the British agriculturist and manufacturer, by crushing out the remaining sparks of life which lingered in the cotton fields of the South ?

I do not propose discussing this question further, but desire to speak of the rise and growth of cotton culture in British In-

dia—to show by what means the wonderful change in it has been brought about, and to present a few facts about railroads and the system of labor. It should be remarked that I speak only of the herbaceous variety of cotton—that of commerce—and not of the arborescent species found in parts of India south of the great mountain ranges of the north. The earliest notice of cotton that we have, comes from India; for Heroditus, 450 years B.C., speaks of trees in that country “bearing as their fruit, fleeces more delicate and more beautiful than those of sheep,” and of the natives using these fleeces for the manufacture of their cloths. We have evidence to show that the first cottons used in Europe were of Indian growth and manufacture; for Aristobolus and Nearchus, two generals of Alexander’s army, brought back to Greece detailed and wonderful accounts of the cotton plant and tree of India. A few years later cotton stuffs were introduced into Greece, the product of Indian fields, spun on Indian distaffs, and woven on Indian looms. From this time a ready market was found for these stuffs, and a race of travelling merchants sprung up, traders who went into Hindostan to barter for cotton fabrics, and who brought them back for sale in Athens and Rome. At length trading vessels began to coast along the shores of the Red Sea, and these cotton goods became cheaper and more common, though still accessible to the nobles only. As early as the year 63 before the Christian era, vessels sailed for the purpose of trading for these wonderful fabrics at Calicut, from which prints now known as calicoes were obtained, and other ports along the coast of Hindostan. About this time, Verres used these cottons for a covering to his tents during his campaign in Sicily; Lentalus Spinther, Livy informs us, introduced cotton cloths as coverings in the theatre of Rome, at the Apollinarian games; while Cæsar covered the forum with them, and made a covered walk from his own residence to the Capitoline Hill.

Before the Christian era, therefore, near two thousand years ago, we find the natives of India raising, spinning and weaving cotton, and making fabrics so delicate and fine, that even the improved machinery of our own times has not been able to excel. More than one ancient writer speaks of the famed muslins of Decca, made of a staple too short to be spun by European machinery, yet spun by Indian hands so fine that they were designated as “webs of woven wind;” so delicate, that they became almost invisible when spread upon the ground and covered with dew. And for the past two thousand and odd years Indian men and women have followed in the footsteps of their forefathers, and have raised cotton, spun it and wove it in the same primitive style. The genius of the Anglo-Saxon race alone

raised this branch of industry from what it was before the birth of our Saviour to what it is to-day.

Since the first occupation of India by Europeans, we have been acquainted with the fact of its capacity for cotton culture ; yet all attempts to use the India cotton in European manufactures were failures. Even with the improved machinery of the past five and twenty years it could not be spun successfully, and after repeated failures, the work of spinning and weaving this husky, short-stapled cotton was left to the natives, who still made even, regular fabrics, and continued to send to market the famous Decca muslins. As late as 1857-8, during which years the writer was an officer of the Bengal army—the years of the terrible Sepoy Rebellion—India cotton was not held in high esteem. It was purchased for stuffing furniture, and sometimes to mix with American cottons ; but no manufacturer attempted to use it alone in the manufacture of goods. Even the operatives declined to use it, saying that its short staple made them unhealthy by filling the air they breathed with small particles. This complaint is still heard in some mills, but seldom in comparison with that of ten years ago. It took some years to convince the spinner that the fault lay in the machinery as well as in the staple, and though he had seen the Indian spin it by hand, and with perfect success, he still continued the clumsy work of trying to spin short-stapled cotton with machines made for the long staple. This idea did not occur to him, and the failure was charged upon the cotton. This led to inquiries as to whether or not the staple could be improved, and it was only when the late war cut off the supply of American cotton, that it was found the staple could be greatly improved by proper cultivation. To this end most earnest attention was turned. At that time—before the Sepoy mutiny—cotton was raised in small quantities in almost every part of British India, but the best varieties were found in the north, in Bengal and Madras, and in the broad tract of country lying between the Himalaya and Vindya ranges of mountains. A strip of land some three or four miles in width and forty miles long bore a remarkable quality of cotton, with a staple too short to be spun with European machinery, yet with a fibre as fine as gossamer. It was from this growth that the muslins of Decca were made. In the interior of Madras and in lower Bengal considerable cotton was raised, but it was of an inferior quality, short-stapled, curled, rusty and hard to work. For more than a thousand years the natives had raised this cotton, using the most of it for cushions, batting and for stuffing beds, picking out a little here and there to be spun by hand. When the mutiny broke out in Bengal, the coolies and ryots, laborers of the lowest class, were raising and using this

cotton as their forefathers had done. During the war the natives generally fled at the approach of our armies, and I have frequently ridden through deserted cotton fields and pulled the cotton from the ripened bolls. As a general thing it was a hard, knotty mass, difficult to separate into threads, and exceedingly brittle. Sometimes we would come across aged natives picking this cotton, and later in the year I have frequently seen the women picking or ginning it by hand, for the old men to spin and weave. It is interesting to watch them at this work, and to observe with what delicacy and nicety they join the ends of this short staple, and spin it out into a fine and regular thread. It is said to be by the moisture of their fingers and a peculiar knack of joining the ends that the natives succeed in making with this cotton a thread superior to any that could be spun by machinery. But though the lower caste laborers of the north generally deserted their fields, there was a large number farther south who remained loyal to the British government, and continued their ordinary occupations during the stirring events in the north—at Delhi, Lucknow and Cawnpore. The false and treacherous princes of Oude and Delhi made every effort to arouse this quiet population, and sent frequent emissaries, disguised as musicians, devotees, traders or weavers, to spread the unleavened cakes. These emissaries were generally aged men, and it is probable that we passed many of them in the character of weavers, among the large number that we saw engaged in that employment by the wayside. But these natives remained true to their salt, and many of the aged weavers were at their regular and accustomed tasks. It is a curious sight to see these primitive manufactories. A family is seen sitting beneath a large tree, the women ginning, picking and spinning, the male busy throwing the shuttle. The loom is set up under a tree with low branches; over the lower limb are passed the pulleys; the body is sunk some two feet into the ground, while the weaver sits upon the edge of the hole, with his feet working the treadles beneath. In this manner old men sit throwing the shuttle from morning till night, chanting some monotonous native melody, and seldom looking to the right or left. The fabrics woven in this manner are wonderful. Delicate, even, cleanly, and without the usual flaws and irregularities found in cloths woven by machinery, these fabrics may well challenge the attention of Europeans.

During the rule of the Honorable East India Company, efforts were made to further the cotton interest, and some inducements were offered to planters. At that time a large quantity of cotton was consumed at home, and a small quantity began to be exported. China took a large amount of India cotton, even

at that time ; and the Chinese also had the knack of spinning it, making of it that well-known fabric of commerce, nankens. Asia took some 600,000 pounds, and the amount sent to England gradually increased. In the latter country it was used for stuffing and to mix with American cotton, for the English had not yet learned the Indian and Chinese art of spinning it successfully and profitably. Yet the amount exported to Europe yearly grew larger, and new modes of use, consequent upon the improvement of all the arts, began to create an active demand. Before the mutiny the annual crop, of all kinds, was about 450,000,000 pounds. Of this something near two-thirds were consumed by the natives, and the remainder was exported in about equal quantities to Great Britain and China, with small quantities to adjacent countries. Formerly the cotton raised in the interior seldom got to market, and the entire quantity exported was raised along the Malabar and Coromandel coast, within forty miles of the sea. Burmah also exported some forty thousand bales. When we consider that cotton can be raised almost everywhere in India, from Cape Cormorin to the Himalayas, and from Scinde to Calcutta, we can form some idea of the vast capacities of this country for cotton culture. In all parts of Bengal and Serampore cotton is raised, and made into muslins which have a fair name with the belle dames of the world. Weaving is a slow, tedious process in the open air, and in the manner already described, and it takes from three to four months to make a single piece. Yet the value of labor is so small that these fine muslins can be exported and sold in London or Paris at a price scarcely above the fabrics woven on the improved looms of Birmingham, Bolton, or Manchester. Given a good cotton-growing country, and the next question is, what is the system of labor ; is it abundant and to be relied on ?

British India, exclusively of the later annexed province of Pegu, may be said to include within its limits 1,200,000 miles of territory. Nearly the whole of this is densely populated, at least, when compared with America, some provinces containing a large ratio to the square mile. The Rajah of the Hydrabad, with a territory embracing about 110,000 square miles, ruled over 10,000,000 of people ; while the Rajah of Berar, with a country of 65,000 square miles, had more than 3,000,000 subjects. Again, the state of Satara, situated on the western ghauts, and ruled by a Hindoo Prince, with 9,000 square miles, has a population of 600,000. Perhaps there is no country on the face of the globe with a people so various. Here we find Burmese, Arracanese, Peguers, Zalamis Karens, Tounghoos, with an admixture of Siamese blood amongst them ; with here and there a sprinkling of Chinese, Jews, Moguls, Moors, Ben-

galese, and others in smaller numbers. Foremost among the inhabitants of to-day must be regarded the British, who have rapidly civilised the country; then we have the Portugese, numbering about 1,000,000; and at Bombay and other places along the coast we find the Parsees, or Ghebirs. But a vast majority of these peoples are peasants or laborers, and come under two or three general heads. First, perhaps, we may put the pioneers, of which the Sontal is a type; then coolies and the ryots. The latter is so called from his originally being a renter of land by lease, which is considered as perpetual, and at a rate fixed by ancient surveys and valuations. They are the cultivators of the soil in India, having a perpetual hereditary and transferable right of occupancy, so long as they continue to pay the share of the produce of the land demanded by the government. But while the ryot is, theoretically, an independent renter of land, he is, in fact, the veriest slave or serf of the proprietor. The lands are owned by the Rajah, or Prince, and he exacts from the poor laborers about nine-tenths of all the produce, holding the power of life and death in his hands. If the slave of a peasant chanced to belong to some minor proprietor under the Rajah, his case is even worse, and he has to work year in and year out for his bare subsistence, poor enough at best. Worst of all, there is no earthly hope of bettering his condition; and he, knowing that he is doomed to labor forever, has no ambition beyond the moment. In this serfdom, or slavery, the proprietor was aided by *caste*, a social law that even British civilisation has not been able to repeal in full, though after the mutiny caste was not recognised. An unfortunate recognition of the privileges of caste by the Anglo-Indian government, at the beginning of its triumphs, greatly encouraged the isolated pride and religious prejudices of the high-caste Brahmins, and made them even more oppressive to the poor low-caste peasants, or slaves, as they were in fact. This was doubtless intended for the good of British rule, for the governors had a dread of interfering with the visible mysteries of their idolatrous faith, and so tolerated the social code, until the high-caste Brahmins and Sepoys became arrogant, and finally mutinied for some fancied breach of their ancient and time-honored privileges. The Sepoys, the name given to the native troops in the service of the East India Company, were mainly high-caste Brahmins. There were some two hundred thousand of them under arms, but it was deemed necessary to increase the force, and to do so some low-caste Brahmins had to be taken. This led to constant struggles and contentions, and showed the folly of the early recognition of the privilege. A low-caste Brahmin may not even touch an article to be used by one of high-caste, can-

not hand him a canteen of water, or even look at him except in a particular manner. In recognising caste, therefore, the British government recognised a state of slavery far worse than any which had existed in Jamaica or in America. The high-caste Brahmin felt justified in taking the life of one of low-caste whenever it suited him to do so, and held it as a right to beat and insult him at will. Nothing could ever remove the taint of being of low-caste, and hence the proprietors held their ryots or serfs in bonds which were stronger than those of the Southern planter over his slave. The latter always had the right of making money for himself in leisure hours, and of buying his freedom when he had saved a sufficient sum. But there was no such hope for the poor ryot, and he felt that he was doomed to perpetual servitude during life. Fear of consequences—of his life, in fact—made him an earnest laborer, and so the prodigal and wicked Rajahs took from them all but the merest pittance, and filled their own treasuries with that enormous wealth which was once the wonder of the world. Since the war this has been slightly changed. The condition of this people is vastly improved, but still they are serfs to a certain extent, for they can have no hope of rising above their present status. Hence they have no ambition, and are happy to work for the established rate of wages, which is but two or three pence per diem, with some privileges for raising vegetables and poultry for their families. The coolies are the ordinary day laborers, but at the present time the term ryot means less than it did of old, and the ryot may be regarded as the peasant, or land-laborer of India.

From this it will be seen that cotton can be grown in British India, that even its short-stapled product can be worked by improved machinery, that it can be improved in staple and fibre by cultivation, and that labor is cheap, abundant and under perfect control. Next we have to inquire into the extent of country capable of cotton culture. The different countries which now form the three presidencies of India, together with the allied States which were only nominally independent of the India Company, have been known under various names. Comprehensively, they are spoken of as Hindostan, the East Indies, the Indian Peninsula, and, more properly perhaps, as British India. Extending from the Himalaya range of mountains on the north to Cape Cormorin on the south, and from the Indus on the west to the Delta of Berampootra on the east, British India embraces an area of 1,200,000 square miles, as has been before remarked. Taking the subdivisions, we find the presidency of Bengal containing 306,012 square miles; Madras, 141,920; Bombay, 64,908; Scinde and

the Punjab, about 160,000 square miles; while the allied States make up the remainder. As an outlet to this vast country, there is a sea-coast of 32,000 miles—the coast-line of the Indian Ocean being 1,800, and that of the Bay of Bengal 1,400 miles. The greatest width of Hindostan is about 1,500, while the coast-line of the Indian Ocean may represent its greatest length. From the northern boundary in the Himalaya range, the country is intersected by ranges of lofty mountains, the face of the country presenting a varied surface of table-land, delta and valley, with large tracts 2,500 feet above the sea level. Naturally, this gives a varied temperature. In a large portion of this extent, however, cotton can be raised in abundance. It is found in Bengal between the Himalaya range and the Vindya mountains, and below these to the southernmost point of Cape Cormorin, though in the south the cotton is yet inferior. Besides the general divisions above, there is another suited to our purpose. These divisions are five in number: the Deccan, south of the Vindya mountains; north of this range the Delta of the Ganges; Central India; the Delta of the Indus, and that part of the Deccan, south of the river Kishna, called Southern India.

The Deccan is generally mountainous, but beyond the ghauts, (from *gati*, Sanscrit,—a gate or pass) there are extended tracts of table-land with splendid cotton soil. On the southern extremity of the western ghauts are the Himalaya hills, running eastward, and famed throughout India for their fine climate and fertile tracts of table-land. In midsummer, I have here seen the air as cool as at the sea-side, and there is seldom wanting a cooling wind. Many towns upon this range have become popular healthful resorts with Europeans, where, even in the hottest seasons, they enjoy the bracing air of Alpine lands, within a few days' journey, by *dawk*, of Madras. The greater part of the Deccan consists of table-land of considerable fertility, and here we find the better quality of herbacious cotton—the arborescent variety being found farther north, in the highest regions, and even in the Himalaya range itself. The greater part of these table-lands is skirted by long ranges of mountains or ghauts, which stretch out towards the coast, until they terminate in plains. Central India is triangular in shape, the base being the Vindya range. It consists of elevated table-lands freely interspersed with mountain ridges and extensive plains, some of which are exceedingly fertile. Along the range dividing this from the Delta of the Ganges are large coal deposits, which now furnish Calcutta with supplies. In the south, the country has an irregular surface, the first few miles from the sea being flat and sandy, with no vegetation

but topes and palms. Further inland the ground is broken into hillocks, more or less covered by vegetation, gradually elevating themselves until they become merged in the spurs of the ghauts, and crowned with dense jungle and heavy forests of teak and satin wood.

In some places on the eastern side, especially in the Delta of the Ganges, there are tracts of land incapable of cultivation. This is the case between the mouths of the Ganges and Berampootra, where there is a section called the Sunderabunds, extending about seventy miles inland and fifty miles in width, covered with swamps and thick jungle, the resort of every variety of reptile and wild beast. The effect of the rising of the tides from the sea is such as to preclude any but the most scanty use of the soil, though recent attempts have been made, with good success, to recover it by drainage and a levee system. Beyond the reach of these periodical floods, we find everywhere large ranges of rich and fertile lands; partly watered by many streams—rich rivers like the Hooghly and Ganges—partly irrigated by artificial means, with government aid. But to the north, near the swamps at the base of the Himalayas, are found numerous tracts of waste land, covered by low jungle and rank grass.

But setting aside the few tracts of country named, which can only be reclaimed at great cost and trouble, we find a vast and magnificent country, capable of producing cotton, and by cultivation, of reproducing its present yield more than twenty fold. In the plain of the Ganges alone, comprehending within its limits the districts of Bengal, Behar, Tirhoot, Oude, Rohilcund and Allahabad, portions only of each, with a population of more than 60,000,000, more cotton can be produced than was ever raised in the Southern States of America.

Extending through 23 degrees of latitude, we may expect to find in British India, a great variety of climate, influenced moreover by the irregularities of the surface of the country. On the Himalaya range, or the Neilgherries, we may meet a temperature of 28°, Fahrenheit, and in the Cutch country we find the thermometer ranging at 106°. The Indian seasons are two in number, called Monsoons, and felt more or less throughout Hindostan; but the northeast monsoon is subdivided into the temperate and hot months, giving in reality, three distinct seasons. The hot season prevails in March, April, and the early part of May, during which there is an exceedingly dry wind blowing in from the Coromandel coast, very refreshing on the high lands, but on the lower plains often giving rise to sickness among Europeans. The seasons of Ben-

gal are alternately hot, cold and rainy—the finest months being the latter part of February, March and April. Sometimes April has to be included with May and June as intensely hot, rendered oppressive to Englishmen by a scorching westerly wind. After the rainy season, which ends generally with July, the weather is cooler and more agreeable. In the interior, on the fine table-lands, I have rarely seen the air still except at night. During the day the wind blows in steadily from the coast, and this, though sometimes dry and hot, produces an agreeable cooling sensation. But I must except Calcutta from the list of pleasant places in British India, for of all places on earth, I think that this, technically speaking, absorbs and radiates the most caloric. The soil is as hot as if baked in an oven, while the radiating power of its streets is something terrible. I landed there a young ensign at the healthy age of twenty, and, even after a voyage down the Red Sea, nearly fainted from exhaustion the first half hour after arriving. There is no part of Hindostan where the heat is so oppressive and overpowering. During the rainy season, when the monsoon sweeps across the Sunderabunds, it brings a dense heated atmosphere heavily laden with animal effusion, and feeling as if it had passed through a furnace. From this parching, scorching wind, Europeans suffer much more than from a higher temperature and a June air. There comes over one a feeling of lassitude and enervation hard to shake off. Even the natives succumb to it, and I have seen the kitmudges waiting at table, fall upon the floor and be asleep in a minute, so that they had to be waked (sometimes no easy matter), when again wanted. The nights in Calcutta are dreadful. Some idea of them may be formed when I say that the best relief is a hot bath, which steams one up to a temperature something near that of the atmosphere. But at certain seasons the climate is very like the months of July and August in New Orleans. As I write, a warm January day, the thermometer stands at 60° ; in Calcutta, the mean temperature of the winter months is 66° ; in April, 86° ; in May, June and July, from 106° to 110° , and in November the mean is 74° . But many things conspire to make Calcutta a "miserably hot hole;" among them we may name the sand upon which the city is built, and the wind which sweeps over the jungles of Sunderabund. But away from the coast the climate is agreeable, and seldom hotter than in the interior of Georgia or Alabama. In the cotton fields the ryots work without distress even on the hottest days, owing to the breeze. It was a source of great pleasure to me to find that my stay in Calcutta was limited to a few days—the stirring scenes in the interior calling on

all officers at once. The trip up was agreeable, and I found the climate far better than I had anticipated. I was ordered to the gallant and dashing O'Neil, a man who thought of deeds more than the trouble and difficulty of accomplishing them—a man who turned his fusiliers into "foot cavalry," like Stonewall Jackson; yet in all of our rapid marches, I have never seen the men more distressed than those who marched through the Southern States in midsummer. In our march from Lucknow to Delhi the weather was very cold; and in the elevated mountain ridges within two days' journey of Bombay, (where the thermometer stands at 100°,) one may find the mercury at zero. In the Blue Ghauts the climate is very fine, and the American planters would find it preferable to that of the interior cotton sections of the South. It is not so cold as in England, or perhaps as in Virginia in this country; but it is far more equable, and the changes are not felt as in Great Britain. There the minimum mean is 38°, against 11° in England.

These remarks are incidental merely, but they have an important bearing upon the cotton question. I have said enough already to show that England needs not to involve herself in another war to get all the cotton lands that she may require. The greater portion of the lands spoken of, excepting the lowlands of the Deltas known as the jungle, the crowded mountain sides, and the Southern sea-coast, is adapted to the culture of cotton; while all of it also produces various other fibres which are manufactured by man. In the low lands of Bengal there is the jute, used like flax for canvas and cordage; the China grass, used for rope and fancy articles, like hammocks, shades and awnings; coir, the fibre of the cocoanut, produced upon the Malabar coast, superior even to that produced in Ceylon. And besides these there are several varieties of Indian hemp, all used extensively in native manufactures and largely exported. In the northern provinces flax has long been cultivated, but principally on account of its seed, which is largely expressed into the linseed oil of commerce. The fibre is used for thatching the huts of the poor; sometimes for houses.

But the culture of these fibres has, in a great measure, given place to that of cotton since the demand created by the American war. The attention of all is now turned to that great staple, to its production in large quantities, to its improvement, and to its transportation to market. And in this, as Senator Sprague testifies, there has been a wonderful change wrought by the skill, energy, and industry of Englishmen. When a supply could no longer be obtained from America, English capitalists turned their attention to their Indian cot-

ton fields, and in one year's time learned the important fact that, by drainage, fertilizing, cultivation, the staple could not only be improved, but the yield vastly increased. This was a long step in advance. For three years planters labored under difficulties, and the profits upon invested capital were very small—a profit so insignificant, that it would have discouraged the Southern planter. But in the end the great fact was established that England could do without American cotton, if compelled to do so by war or other chances, and that her own cotton could be made equal to that produced in the South. It only needed patience, energy, hard labor and money, and all of these conditions were complied with promptly. And meantime English mechanics had not been idle, and machines were invented by which this short-stapled cotton could be spun very well, and could be made successfully until the longer staple could be produced.

These facts established—cotton cultivation proving a success—another contingent arose, and men had to consider how the cotton raised in the interior could be brought to market. The price of labor was small, and cotton was raised at a low sum per bale, but it required a large sum to get it to the seaboard for shipment. Railroads then became a necessity, and the government encouraged the building of them. In England, too, the necessity for these roads was understood, and capitalists were ready to advance the money if properly secured against individual speculation. The failures of Sir Morton Peto, Overend, Gurney & Co., and other firms, largely interested in railroads, with the disasters to several companies which marked the time, created a widespread distrust in all railroad enterprises, as well as in all private banking and trust companies with limited liability. The stockholders, or organizers of the Indian railroad companies, were unable to conquer this distrust; but the Imperial Government came forward to aid them, and adopted a policy well calculated to develop the agricultural and monetary interests of her Indian possessions. No sooner was this policy adopted than money was offered in abundance; and not only for railroads but for canals, irrigation and other internal improvements. And while India was benefited by the Imperial guaranty, the people at home were furnished a safe investment for their money in the Indian guaranteed railway securities, paying them an interest of 5 per cent. Thousands of people with small incomes were glad to withdraw their moderate fortunes from the 3 per cents. and invest in these securities. Thus, the Imperial Government strengthened itself in the colonies, and created a new incentive to loyalty at home, by increasing the number of persons

who had a direct monetary interest in sustaining the government and its credit.

With the increased culture of cotton, as I have already intimated, in all parts of India, but particularly in Central India and Bengal, there came a demand for increased transportation. At the same time military purposes required the aid of railway lines to the principal army stations. Within the British possessions, great public needs receive government attention, and Parliament soon put the Indian railway system on a fair footing, and gave it all proper assistance and encouragement. Hence, companies were formed and chartered by the Indian government, and railway routes were surveyed. When this was accomplished, money was required to commence building the lines laid out by the engineer, and it only needed the guaranty of the government to bring it in abundance. This guaranty was given both by the Indian and the Imperial Governments, and the money was obtained without difficulty. It would have been as easy to crush all attempts to construct railroads in India, as for the United States to destroy the railroads of the South by seizing their property; but in England, wise councils generally prevailed above all party interests. An interest of 5 per cent. upon the full amount of capital invested was guaranteed by the Imperial Government. To each line the Indian government appoints an official director, stipulating that the contracts shall be executed under his supervision, acting for the government. The guaranty of the Indian government must not be confounded with that of the Imperial Government. The receipts and expenditures in the colonies—that is, the Indian revenue—are kept quite separate from those of Great Britain, and it is the receipts from customs and taxation which are pledged for the payment of this guaranteed interest. And when the lines are in working order, and the net receipts therefrom are sufficient to pay 5 per cent. upon the capital, the surplus, if any, is to be applied in repayment to the Indian government of the interest guaranteed, and paid during the process of construction. This double guaranty was sufficient to bring any amount of money required by the Indian railway companies, the stock of which has constantly been at par, or even at a slight premium; and it is estimated that, within a few years after the completion of the whole system laid out, that the surplus receipts will have been sufficient to repay the government for the interest advanced, leaving the whole profits to the shareholders. I should here remark, that the first companies formed were merged into the Indian Railway Company, under this guaranty; also, that the same system is applied to the construction of roads, canals,

to irrigation, and to coast and harbor improvements, but to an extent inferior to that of the railway system, which has been projected on a much larger scale. The company has not met with the slightest difficulty in obtaining money; nor is there any difficulty in getting all that is required for any colonial improvements under the system of local and Imperial guarantees. Each loan called for is readily subscribed in England. To show the interest taken in this matter by the home government, I may say, that a law has recently been passed enabling trustees to invest in securities guaranteed by the Indian government such trust funds as a few years ago could only, according to the law then in force, have been invested in Imperial British Government securities.

In this way the necessary capital has been procured for carrying out all of the projected improvements approved by the Indian government, and particularly for the system of railways absolutely demanded by the times. A road was first started from Calcutta, running up the Delta of the Ganges, thence to the Hooghly, at Barrackpore. Thence, it was run up this river, through Moorshedabad, Bhagulpore, Patna, Benares, Allahabad, Delhi, and other large cities, running through the river valleys, and over the vast watershed extending towards the Himalaya mountains. In the Bombay presidency there has been an equal amount of enterprise, a railroad having been run from Bombay through the ghauts of the Vindya mountains, intersecting with the road from Calcutta, thus forming complete communication by rail between these two important ports. These lines pass through a rich and productive cotton country. It is probable that the line is now complete, as the English papers announce that the ocean steamers which have hitherto run alternate weeks to Calcutta and Bombay, will now be withdrawn, and a weekly line of steamers run to Bombay, connecting with the railroad to Calcutta. Thus, India has constructed, since the beginning of the American war, over four thousand miles of railway, running through the most important towns and cities, and opening up a market for the products of the rich interior country.

The influence of this railway system upon cotton culture is apparent to the most casual observer, and I have only need to mention it casually. The Bombay Railroad has already had more cotton offered for transportation than the means at its disposal would permit; and the resources of the country for the production of cotton, seem to be only bounded by the facilities for getting it to market. These facilities are daily increasing, and the vast piles of cotton bales which now lie at every interior station along the line, will soon be carried to Bombay for shipment to England.

I have already spoken of the improved quality of the cotton since the fields have been cultivated by Englishmen, or under their direction. On lands which formerly produced the short-stapled cotton used for stuffing purposes alone, is now grown a variety which compares very favorably with American uplands. And this has been the work of the past five or six years. The increase in quantity is also remarkable. At present we have the Liverpool market report and statement up to the 20th of December, 1867, and find that 1,247,180 bales, averaging 400 pounds each, have been imported into Great Britain during the year, with 132,000 bales at sea. Taking into consideration the increased amount consumed at home—the larger export to China and other parts of the world, with the vast quantity now waiting for transportation in the interior, and we can form some idea of the present yield of cotton in British India at the present time.

And we must remember also that the country is large, the population dense, and that there are thousands of acres of good cotton lands now in waste. The system of labor is also adapted to the culture of cotton, and more nearly approaches that of the South before the war than any other that we can name. As many coolies and ryots as may be needed can be hired for two or three pence per diem. Owing to *caste*—that peculiar feature of Indian society of which I have already spoken—these laborers have no chance of rising above their present condition, and hence they are docile and manageable laborers. If capital does not actually own its labor, its control of it amounts to the same thing practically, with, perhaps, some advantages to the proprietor. He is relieved of great expense, responsibility, and trouble. Contracts are made from day to day, and a ryot is only paid for the labor which he actually performs. He has to provide for himself, take care of himself when sick or enfeebled, and has to support his own family. The only possible chance for raising himself is by entering the army, and this is offered to but few. Some of the low-caste Brahmins become pioneers, and clear lands upon the outskirts of civilization. Along the borders of the Kolehân, in Kéonjur, and Mohurbunj, where the Koël and Byturnee wind whistles through the far-extending forests, the poor Ho, or, as he is more commonly called by his more civilized neighbors, the Kôle, makes his wretched clearing, rears his solitary hovel, and shares with the wild beast the scanty produce of his fields. The Kôle, or Sontal, belongs to the better class of low-caste Brahmins, and hence works for himself, and becomes the wretched pioneer of the forest and jungle. Yet these men are among the lowest of natives, and live

on almost nothing, working in marshy, sickly places, where the ryots of the higher lands would surely die. But this class fulfils its work on earth, and gradually encroaches upon the lair of the tiger in the jungle, leaving behind cleared lands for more civilized followers. By these people, even within the period of my own life, the jungles of Koorsee, near Chaibasa, have been much curtailed in extent, as also in Mánbhoom, near Midnapore. Near Keyra, in Singhboom, where there were once extensive jungles—almost entirely given up to tigers, bears, and jackalls—in Orissa and Porahaut, the jungles are gradually growing smaller under the hands of the Kôle, and behind him are lands which Europeans may use for cotton and other products. And we now find cultivated fields in Rengrapeer—one of the remotest and wildest divisions of that wild country—the Kolehân, on the southwest frontier, where formerly there was nothing but waste. Some of the finest lands in the world, along with much that is now unfit for cultivation, are found in the Turraïe (from the Persian *Tur*, fresh, new, moist) or Turriana of Nepaul and the Morung, names given to the plains stretching away southward from the Cis-Himalayan range. Much of this territory is now cleared, but old Indian officers can remember the time when it was almost entirely covered by forest and vast beds of elephant grass. These plains afford an almost inexhaustible pasturage for buffaloes and other cattle, which are driven by thousands from the villages along the cultivated country, as soon as the grass dries up in the latter, to graze in the low, humid lands of the Turraïe, until the rainy season calls them to their homes. These herds are tended by a wild and half savage set of men, acclimated to the pestilential air of the swamps, which they leave only in their excursions to the villages for food. Here they live in low, swampy reeds and forests, in which other human beings would be struck down in a week with malaria, and pass their churlish lives among their herds of buffaloes, scarcely superior to them in point of intelligence. These "Aheers," or herdsmen, have little communication with other men, and are good for this kind of work alone.

I have thus given a rapid sketch of the culture of cotton in India, and have endeavored to leave the inference clear that Senator Sprague was correct when he said that it was due to the energy and skill of Englishmen. Were not another pound of cotton raised in America the mills of England would still go on, and the amount of cotton brought from India would increase with the demand and with the means for transporting it to market. The main thing, it will be confessed, has been the aid rendered by the Imperial Government to all required improve-

ments in her Indian colonies, and particularly to railroads and irrigation. And this aid is now being rendered in various ways, not alone in India, but in Europe, along the great overland route to her Indian possessions. It may not be out of place here to mention some roads in which England is directly or indirectly interested, to which she advances large sums of money and gives a valuable moral support and encouragement, for the purpose of shortening the journey to the Indian frontier. I do not mean to say that the government is taking hold of these roads as she has done in the case of those projected in India, but the favor with which these lines are regarded induces the powerful press to advance them, and Englishmen take stock in them readily.

By examining any railroad map it will be observed that west of the Danube there is a complete network of railroads, while to the east of this river there are none. This deficiency, however, is not likely to be of long duration, for the military and commercial demands of European nations render railroads to the East a matter of necessity. It is not going too far to say that within a period of five years new channels of commerce will have been opened up in this section of the continent, and Constantinople put in direct communication by rail with Paris and other large cities. This will vastly increase the Eastern trade, which has hitherto followed circuitous routes. It is probable that within this time Russia will have railway lines connecting the Volga and the Black Sea with the Baltic. Still more important in a European point of view, is the connection of Western Europe with Southern Russia. It must be observed that these two objects are intimately connected, for one or more of the lines from the Danube must terminate at Odessa, the point of terminus, probably, of the Russian lines from the Baltic. A project is now tolerably well advanced to join the Kiev line and the Austrian railway system, at Lemberg in Galicia. The length of this line is about three hundred miles, one hundred miles in Austrian and two hundred in Russian territory. It is probable that another year, owing to increasing commercial necessities, will find the Austrians building roads between other towns for the purpose of making the roads in Galicia a part of the trunk railway between Germany and Odessa. To connect the lines above mentioned with that from the Baltic, another road must be constructed, between Lemberg and Volostchisk, for instance, a distance of about one hundred miles. There are also in contemplation Hungarian lines to be carried eastward through Transylvania and Moldavia to the Odessa-Tiraspol line; but this line through Galicia and Southern Russia will be the earliest in operation. The south of Russia is one of the richest and

most productive countries in the world, and the gain to commerce by the opening of these lines will be immense. The advantages for military and traveling purposes are not easily estimated.

These lines to Odessa will be useful not alone as links between Southern Russia and the West, but as joining the ports of the Black Sea with those of the West. At the same time lines as important are being constructed from the Danube to Turkey, through Roumania. A road over the Moldavian steppes, from Belgrade to Bucharest, would also open up a rich and productive country. And in Turkey favorable concessions have been granted by the Sultan for railroad purposes, and the prospects there are brilliant. The main result to England from these lines, will be the formation of close bonds between Asia and Western Europe. When the ports of the Black Sea are brought within five or six days travel of London, the seemingly distant sounding names of Erzeroum and Trebizond will become more familiar, and those places will be spoken of as many trans-alpine towns were a few years ago. The whole of Asia Minor will have then become accessible, and new railroads will start in that direction. When the Russian Trans-caucasian line is extended to the Caspian Sea, Persia will be invaded by railroads also, and a line run from Tiflis, the terminus of the Russian Trans-caucasian line, to Tabriz or Teheran. Thence a short line will bring us to the borders of British India; and a quick route to that country will have become an accomplished fact. And the importance of this railway communication is so well understood that Englishmen will take time by the forelock, and have their own lines ready for the connection. The year which sees the completion of the lines to Tiflis, will also find roads from Kurrachee to Madras, from Darjeeling to Beypore, thus connecting, via Southern Russia and Persia, London with Calcutta, Madras and Bombay. If these roads are taken in hand promptly, (and they will be unless stopped by war,) and railway lines run via the Black Sea, the Caspian, Meshed, Herat and Candahar, in five or six years—certainly in ten—there will be a through railway from London to India, and the total journey would occupy but twelve or fifteen days. Of course there must be one or two short breaks in the line, but these will take but little time, and will form agreeable reliefs to the tedium of railway travelling. The moral influence of such a route would outweigh the disadvantages of having the line running through a foreign country; and this is apart from the commercial gain, which would be immense. A little reflection here will show the reader the wisdom of the policy adopted by the British government.

The system pursued by the American government has been exactly the reverse, and instead of developing her own resources, and fostering her native industry, she has been crushing them beneath the weight of ruinous legislation. The destruction of the labor system by the war; the absurd regulations since made for its control; the tax upon cotton, and the restrictions upon getting it to market, the action of the Government in pressing its claims against railroads already much crippled, and the encouragement given to the negroes to resist all efforts to make them useful, have all told severely against American enterprise, and have nearly ruined cotton culture in the South. With good labor in India, to be had for one or two dollars per month; with every encouragement on the part of the Indian and Imperial Governments, how can the American planter hope to compete with his more fortunate rival? The answer will probably be that the finer quality of the American cotton will make it bring a better price; but this is a slender thread to hang one's hopes upon. The Indian staple is constantly improving; and, besides, machines are being invented by the use of which short stapled cotton can be spun successfully. The difference in price is now very trifling; and too trifling to name when we look at the difference in the price of labor, and the different systems in the two countries. In the South labor is entirely too high. No planter can afford to pay \$12 or \$15 per month for his hands; and the system of yearly contracts would soon break any planter in the world who had to deal with American freedmen. But the true answer will be given by the thinking man, when he acknowledges that the Southern planter cannot compete with the Indian planter until labor is improved and cheapened, until he has the aid and support of his government, until he has better control of his labor, until taxes are less onerous, and until the social and financial condition of the country is greatly improved.

To conclude, permit me to say that, in my opinion, cotton can never again be raised in the South with profit: that is to say, nothing like the profits of a few years back. Hereafter the planter must be content to make four or five per cent upon the capital invested. The percentage will, of course, vary with different years, but in no case, I now believe, will it exceed the regular rate of interest. Whether or not capitalists will invest their money at that rate, and have the worry and trouble of negroes remains to be seen. It is more than probable that "planting" in the South is over, and that planters will now become farmers; also that cotton will be chiefly raised in small quantities by negroes and poor whites. The exceptions to this will be in the cases of large existing estates.

The experiments made by Northern men in cotton planting have invariably proved disastrous, and this will be likely to deter others from investing money where the rate of interest is so low and where the risks are so great. And Southern men who have means will never again invest largely in cotton so long as the Government stands hostile to all their interests. This state of things will fall as heavily upon the negro as upon the white, and it will only be when the Government makes some favorable labor laws that either race can do much with the cotton fields of the South. Meanwhile England gives every encouragement to planters, and the India Company offer fair inducements to experienced cotton growers.

Since this paper was commenced we have received the Liverpool cotton statement to the end of the year, and find that the case stands even worse against us than I have already made out. The following extract, which I take from the New York *Albion*, shows the state of things in 1865, and contains some pertinent conclusions:

"But let us now turn to American 'King Cotton,' which it was not long since ostentatiously asserted must and would rule the entire world! This American king rose to the height of his grandeur, probably forever, in the year 1860, when Great Britain accepted at his hand 1,115,890,608 lbs., while it received from all other countries combined, 275,048,144 lbs. But what was the state of the case in 1865? It was as follows: The United States sent to the United Kingdom only 135,832,480 lbs., while little Egypt alone sent her 176,838,144 lbs.; British India, 445,947,600 lbs.; Mexico, 36,664,880 lbs.; Brazil, 55,403,152 lbs.; China, 35,855,792 lbs.; the Mediterranean ports—exclusive of Egypt—27,181,840 lbs.; while New Granada and Venezuela sent 14,699,328 lbs., and the British West Indies and Japan also contributed each about 3,000,000. Such, in brief, is the short-lived history of the imaginary, and now effectually dethroned, American 'King Cotton.' It is high time that the edicts put forth in his name should be ignominiously withdrawn by Congress, and that returning reason should once more be found within the capitol walls at Washington. But, in view of those leading facts, we would ask in all candor is this the time for the American people to be strangling their own commerce, by cutting off all external trade; to be taxing out of existence the industries of their own land, and forbidding by the same laws the entry of the cheap products of other lands? Is it the time to be erecting military despotisms over nearly one-third their own area as states, and at the same time appropriating what little hard metal—or real money—there is at present in the country for

buying up the wild and unproductive regions of both the North Pole and the Equator? Is it a proper time to browbeat their seniors and impertinently assume a dictatorial attitude towards older, more substantial, and in reality, as a whole, much more prosperous and happy nations? The financial, as well as the commercial position of the country is severely affected by the bullying and overbearing tone assumed by the American Government since the close of the late war; and when to this is added the harsh attitude assumed towards their vanquished brothers of the South, and the unwise commercial legislation of the past few years, it is not so great a wonder after all, that U. S. Bonds bearing six per cent. interest command but little more than two-thirds the price of British securities, bearing half that interest, in the markets of the world."

The returns for 1866 are even more startling, for we find India sending in the largest supply of cotton, having furnished 615,302,240 lbs. in a total of 1,377,129,936 lbs. These figures settle the question as to the productive power of India, and it will be remembered that we have had no reports since the railroads began to bring cotton from the interior. The amount exported to the mother country for the year 1868 will startle the entire world, and will cause all nations to have a higher respect for the happy and prosperous subjects of her Majesty, Queen Victoria of Great Britain.

WILLIAM EVELYN.

ART. II.—THE NEGRO PROBLEM.

REFLECTIONS UPON THE LATE GREAT STRUGGLE IN AMERICA AND ITS PROBABLE CONSEQUENCES—PART THIRD—TREATING OF THE PROBABLE CONSEQUENCES IN REGARD TO THE AFRICAN.

GOD ordained three forms of government for the three several relations in which man was placed—of husband and wife, of parent and child, of master and servant, and defined the duties and responsibilities of each in their several relations. He knew that power, when coupled with interest not to abuse it, makes man merciful, and, therefore, in thus conferring dominion and authority upon man, He has made it his interest to discharge the duties and responsibilities thus imposed as faithfully as the imperfections of his fallen nature will allow.

By a mysterious dispensation of Providence two races of peoples, of widely distinctive traits, have been brought together on this Continent *without* the consent of either, and the relation of master and servant established. Upon this foun-

dation has grown up the labor system of the South, that has grown with our growth, and strengthened with our strength, and had become interwoven with our social and political relations and our industrial interests.

In the second part of these reflections, tracing the causes that led to the Confederate failure,* the beneficent results of our labor system based upon the relation of master and servant have been truthfully stated, and, therefore, need not be here repeated.

Having traced its existence to a Divine origin, we are forced to conclude, while it has been beneficent in its results, it has been just and proper in itself. But as a result of the late great struggle, this relation with the labor system of the South, and our social and political institutions based thereon, have all been demolished. And it is a singular fact that this relation between the races, established without the consent of either, has been, without the consent of either, destroyed. I now purpose to trace the probable consequences in regard to the African. Whatever others may believe, or profess to believe, based upon theory, imagination, or falsehood, we *know* that the African is of limited intellectual capacity—that as a creature of imitation in contact with the white man, under his authority and control, he improves, and has improved. But as universal history and all experience testify, without the authority and control of the white man, to overcome the *vis inertia* of his nature, he cannot progress in civilization and improvement. Equally true is it that while he may live, increase, and improve as servant under the old relation formerly subsisting as master and servant, in *competition* with the white man he cannot live. Hence, as a consequence, in common with all inferior races, as the Chinese for example, he will instinctively seek to avoid such competition, and but for delusive ideas held out to him by professed friends, this result would to-day have been far more manifest than it is. But as the consequences in regard to the African depend greatly, indeed almost entirely, upon the action of the whites, I now inquire what will they do? Shorn as are the whites of political power, they can do nothing through governmental instrumentality, to prevent the plain and palpable result of riveting upon the people of this country a government such as that by which Britain governs India. The only essential condition remaining to be fulfilled for the consummation of that result being to make the white population of the South the equals of slaves, and, as a consequence, slaves when they are equals, for whatever be the nominal condition of the African he is of a servile race.

* Will appear in a future number of the REVIEW.

In many localities the African will overwhelmingly control all local tribunals, jury boxes, etc. In such localities can the whites remain? To admit by act or deed of omission or commission, equality with the African, is to admit inferiority with our own race, which none having self-respect will ever do. Not only will self-respect, but personal safety and self-preservation itself will render some action necessary. And since we have been so effectually robbed and plundered, that neither race will be able to leave the country, the only thing the whites can do will be to SEGREGATE. In this direction, too, the African will instinctively move to avoid a competition he cannot endure, so that each race seeking the same result from motives however widely different, the segregation of the races, if resolved upon, might be speedily accomplished. I do not expect all of one race to segregate north or south, east or west of a certain line, but to segregate to different localities. If such be the result the white race will preserve its individual existence. And if they do the African will continue to retrograde until he attains as nearly as may be his condition in Middle Africa. These are the best results that can be obtained for both races by any other means than under that relation heretofore subsisting of master and servant, and these, under existing circumstances, are the only means whereby we can escape *utter ruin and degradation*, as I shall now proceed to show. It is certainly true, as stated, and nothing is better understood in the South, than that the African, without the control and authority of the white man, will retrograde. Those, then, who practically acknowledge equality with the African will retrograde with him of necessity—will recede, not advance in civilization. Of course such retrograde movement of itself must end in degradation.

In addition to which, owing to the late cruel war through which we have just passed, there is now, and has been for years, great misery and suffering from want and destitution. Unless the policy pursued since the close of the war, although so manifestly ruinous to all, be at once abandoned, and that recommended already in the course of these reflections be pursued—making this a grain-growing and stock-raising region, to which it is so eminently adapted, to the exclusion of the staples save as surplus crop—that want and destitution must increase, and, of course, its tendency to degradation—for want and destitution finally produce degradation. I cannot fail once more, my countrymen of the South, most of whom promised to *live* or die for Dixie, to remind you that the great proportion of the needy and destitute are the widows and orphans of those who *died* for Dixie. You cannot, in the sight of God or just minded

men, more faithfully redeem your pledge to the dead and do justice to the living than to pursue a policy which, while it would relieve them from a fate of "impending horrors," would promote your own interest. The time was when to be the widow of a brave man was far better than to be the wife of a coward, in this land of ours. In addition to all which the power and the patronage of the Government of the United States, and of the States, military and civil, are brought to bear to bring about a condition of things consigning the white race of the South not only to degradation as already shown, but to degradation endless. All laws prohibiting intermarriages between whites and blacks are repealed, and all distinctions between the races abolished so far as the impious efforts of man can abolish the natural distinctions which God created; and while upon the African has been conferred the rights and privileges of freemen, to the bulk of the white population they have been denied. The object to be accomplished is too plain and palpable to admit of doubt. It is in vain to conceal the *nefarious* design under such glittering generalities as "equality before the law." No man can aspire to position who denies it is right for whites and blacks to intermarry, and thus a public opinion is to be created between the Africans and those of the white race who basely commingle with them, either from want of self respect, from fear, or from an ignoble ambition to rise upon the degradation of their race and the ruin of their country, that shall justify such hideous enormity as the admixture or mongrelization of the races. Now, should amalgamation take place between say four millions of blacks and a like number of whites, their offspring, continuing to intermarry or cohabit, would not, like the mule, at once lose the power of procreation, as the term mulatto, from mule, would imply, but could not extend that power beyond the fourth generation. With the decline of physical qualities would be the same marked decline of moral and intellectual qualities, when there would be an *extinction* of such descendants of whites and Africans. Now, there is not a man possessed of true manhood who would not say death would be preferable at first and at once to such a perpetuation of the races, upon whom would be entailed a legacy of increasing misery and degradation.

Now, suppose the descendants of such amalgamation to intermarry or cohabit with others of the original races, or those not so far removed from the original races, the result would be only an *indefinite perpetuation* of such mongrel descendants with an indefinite perpetuation of misery and degradation.

This conclusion is based upon facts, not theories; not

imaginary speculations, but facts authenticated in the measureless past and in the living present. Now, it is well known no such general amalgamation would at once take place. But then those unfortunates of our own race, who from whatever cause become degraded, will find in the servile race of the South confederates in crime, and, of course, among them intermarriage or cohabitation would naturally occur, while a debauched public opinion, it is hoped, would pave the way for other victims. Any one who doubts will have his doubts removed by a perusal of a production on "Negroes and Negro Slavery," from the philosophic mind of Dr. Van Ernie, and a more recent production from the same writer, whose moral worth is equal to his intellectual excellence, called "Life or Death." No one can then doubt that Senator Doolittle was right when he said the governments proposed to be organized in the South would organize hell in the South—indeed, not only effect its organization but its perpetuation in the South. Be ye not deceived, my countrymen of the South. Equality before the law with the African is social and political equality with the African, and social and political equality with the African is hopeless degradation. Hopeless degradation because endless, and endless because helpless. Those in our midst who are in favor of the governments proposed, in general deny that it leads to social and political equality. They are either presumptuous in their ignorance or reckless in assertion. One thing is certain, the whites or the Africans are to be deceived. For us, however, there can be no excuse. The case is too plain. Nor can you trust those who tell you through governmental instrumentality you may be saved. I doubt not their honesty—but, however honest, they know not the situation. They consist mainly of those who, in times past, hoped to save you through party organizations, and then through foreign intervention, but failed. Even should the proposed governments be defeated, no remedy short of segregation of the races can save us, and the misrule and oppression of to-day, should they drive to that result, may be regarded as blessings in disguise. For myself, I have still an unshaken confidence in the providence of God. Thus confiding, I cannot doubt that his unseen hand, so plainly visible in establishing and sundering the relation so long existing between the races in the South, will be again made manifest, and so overrule events that neither the extinction by slaughter of either race shall occur, nor that other catastrophe, more to be dreaded than the extinction of both races at once, mongrelization, and seeing no other escape, amid dangers so appalling, than segregation, I believe that will take place. The emigration of

the white population to the west of the Mississippi is rapidly tending to that result in Texas, because that is so abundant in the means of subsistence, while those east of the Mississippi who can make their particular localities as inviting in that respect should they fail, may find them deserted by the whites if not overwhelmed by the blacks.

I am not unmindful of the fact that sacrifices will be demanded. But the extent of the sacrifices thus made constitutes the measure of a people's greatness. History informs us that the Greeks, after repeated but unavailing efforts to repel the invader, found themselves bound to succumb or leave their country. They did not hesitate. They abandoned their beautiful and beloved city of Athens, their household gods, and domestic altars, in preference, and sought a temporary home on the bosom of the tempest-tossed ocean. This act sheds a brighter lustre over the history of that renowned people than the undying victories of Marathon and Plataea. For while these showed they could achieve success, *this* showed they *deserved* success. Nor is our own history barren of instruction. During the revolutionary struggle of our ancestors it may be said sacrifices achieved success. It is only by evincing a like spirit of self-sacrificing devotion we shall be enabled yet to fill the measure of our country's glory! After all, what are the sacrifices demanded in comparison of the calamity to be averted! Look to the low and degraded character of the population of the so-called republics of Mexico and South America. In justice, Mexico should be outlawed from civilized communities. Theirs is a mongrel population. Look back through the long vista of past years at the mother of the arts and sciences. Upon her bosom are reared those monumental pyramids that, although dumb, speak to us, oh, how eloquently! They tell us of the master minds of a master race in the twilight of history, when in civilization Egypt led the van. They tell us how that race were, as we have been, overthrown through governmental instrumentality, and sunk down to a social and political equality with a subordinate and servile race, while they have for centuries past been looking down upon the desert desolation that surrounds them "where life dies and death lives," and thus is unlocked to *us* the riddle of the Egyptian hieroglyphics!

I know it is difficult for the people of the South to realize the existence of a conflict far more destructive in its results, if those waging it be successful, than the late conflict of arms has been in its destruction of life and property. But in the midst of such a conflict we now are, and to which the late bloody struggle was only a mere prelude. You do not yet under-

stand the real causes of the late great struggle or you would not have been surprised at what has since occurred. Nor did the people of the North. Had they, the late great struggle would never have occurred; and if the mass of the people of the North now understood the policy of their leaders, and the awful catastrophe in which they seek to involve millions of their own race, they would stand aghast at the demon-like atrocity. Let us suppose for a moment all laws favoring marriage repealed, and those passed legalizing prostitution, thus utterly destroying the sanctity of the marriage relation, yet the repeal of laws prohibiting the admixture or intermarriage of the races, should that result in mongrelization (and that and nothing else is the object) would be far more fatal and monstrous. As Dr. Van Ernie shows, the mongrels South and the prostitution North were just about equal sets-off. And it is well known in its early stages, Dr. Channing and others, as champions of abolition, denounced the admixture of the races South, and the South, on that account, as a land *reeking in licentiousness!* The enormity, the sinfulness, and iniquity of the measure are thus made patent to the North and to the world. And the question will occur in what *necessity*, real or supposed, can a measure so monstrous originate? What is the plain, palpable result amongst a mongrel population? But such populations are, and always have been, and will be incapable of living under a government of the free form. Can there be a necessity, real or supposed, of establishing a government of a different form, and suspending that of a free form? Was the late bloody struggle designed as a mere prelude to such results, and if free government is to be made impossible South will it be possible North? Time will show. The people of the North, too, will yet understand why the question of Negro Suffrage, in the classic language of Mr. Greeley as "*Manhood Suffrage*," was presented for the decision of the Northern people. He and others felt the pulse of their maimed and defenceless victims South, but notwithstanding the injustice and oppression of those who apply the bayonet, and who, if they never won laurels before may win them now, that pulse did not beat in unison with their programme because it beats true to the instincts of a noble manhood—true to the name and lineage of Washington. The truth is, even the professed friends of negro equality in the South go no farther than mere professions as yet. Like finger-boards they point the road but do not lead the way. Now, I ask honest men, North and South, what is to be thought of men who spread a feast and refuse to partake? And hence, it was because public opinion South was stronger than the bayonet, and self-respect deterred

from shame and degradation, the question of negro equality, under the guise of manhood suffrage, was presented to the people of the North, to *debauch* public opinion *there* in order to debauch public opinion *here*. What fiendish ingenuity! But we have to thank God the manhood of the North was vindicated by the result! And the time will come when the people of the North will understand not only these things but many others beside as we do. They will yet understand among other things the irrepressible conflict doctrine. But not *now*. I cannot, however, refrain from warning my countrymen against the delusive hopes of deliverance from the perils by which they are beleaguered from any other earthly source than from themselves—for as all such hopes have in the past been, so in the future they will be, *delusive*, as I shall now proceed to show.

Although the Confederate undertaking was a political failure, the Government of the United States in abolishing the labor system of the South, has brought about a *social and industrial* revolution. As a consequence the entire industrial interests of the country are demanding re-adjustment. To all who doubt I commend the perusal of an article in the *National American* for November, under the head of "Cotton and Corn." That paper is in the interest of the moneyed capitalists and monopolists of the North, and however widely I differ from it in its aims and the ends which it seeks, it is ably conducted. How different are its views from those presented to the North-west a few years back, when the people of that great and growing region were told they must fight the South for the sake of a market in the South, and must fight for the Mississippi as a channel for the transportation of their market produce. They did so; but now they are told they have not only lost a market in the South, but have raised up instead a rival in the South. That it must of necessity be so, and as a consequence of the destruction of the labor system of the South, I think has been conclusively shown in that portion of these reflections devoted to the probable consequences in regard to the industrial interests of the South. They are told, however, that they will find compensation in the manufacture of beet-root sugar, that as that was the Providence of France so it will be of the North-west. I hope so, for the less damage and derangement any portion of the country now sustains from any and all causes the better it will be for the whole. But that requires very considerable capital to make the business profitable. And if profitable to capitalists will it be to laborers? If so, well and good. But one thing is certain: heretofore, in no country on earth, were labor and capital in such complete harmony

as in the South, under our former labor system ; not because the Southern people were so much better than other people, but because never before was it the *interest* of capital to protect labor. And inasmuch as it was under the delusion, among other things, that free African labor would be *cheaper* than it was under the relation of master and servant, or, in the slang of the day, slave labor, that the labor system of the South was demolished; and if the value of labor should be enhanced thereby, it was never alleged as an object sought for or desired. Time will show whether such an expenditure of blood and treasure in the interest of capital will promote the interest of the laborer, and time will show whether the labor system of the North has not lost its most powerful and efficient ally and protector in the destruction of the labor system of the South. Because, if the products of agricultural labor were taxed under the labor system of the South, it was capital that was taxed, and in resisting oppressive and unjust burdens upon labor South it was necessarily a resistance to injustice and oppression upon labor North. In better days and better times such were the convictions of that section as well as of the South. But the agricultural products of the South alone sought a foreign market, and upon them, or, which is precisely the same thing, upon articles received in exchange for them, was levied the burden of taxation, as was conclusively shown in that part of these reflections tracing the causes that led to the Confederate undertaking to establish an independent government. But this was only incidentally felt by the North-west, and only to the extent that the price of her products in the South was diminished and her sales curtailed ; but owing to the cheap labor system of the South, and her capacity to produce the staples, the North-west suffered to a very limited extent. But now the cultivation of these products must, to a great extent, cease, and the burden she scarcely felt before she will have mainly to take upon her own shoulders. And thus it is she will learn the true meaning of the *irrepressible conflict* doctrine—that it is the conflict between Capital and Labor. As it progresses the doctrine of *equality* must find its proper solution. If, indeed, God created all men equal, and that be the foundation of our political edifice, the superstructure should conform thereto. And if so, what right has any man, or set of men, to build up and sustain institutions, and enact laws whereby some are enabled to wear fine linen and fare sumptuously every day, while others are clad in rags and tatters, and batten on garbage ; whereby some reside in splendid mansions and are surrounded by all that opulence can bestow, while others are consigned to hovels and penniless

poverty; thus marring and destroying that equality which God created? It is in vain, in this inquiring age, to strive to make a monopoly of an idea, and if, in obedience to this doctrine, African labor is to be emancipated, cost what it may of blood and treasure, can it not emancipate *white* labor? It is in vain to attempt to conceal, under such glittering generalities as "*equality before the law*," such inequality *under* the law; especially when it is remembered, that it is upon those who are placed in conditions so unequal as to shock the moral sense of those whose ideas conform to such standard of equality, are imposed the burdens of sustaining institutions and enforcing laws which mar and destroy that equality which God created: for is it not well known the rich man is only the conduit through which the poor man pays the taxes in so-called free communities? If the owner of real estate rents a house, is not the tax added to the rent and imposed on the tenant? Heretofore it has been found impossible to evade that decree of the Almighty which proclaims by the sweat of thy labor shalt thou earn thy bread. Hence, heretofore it has been found impossible to establish governments not based in some shape or form upon the three forms of government ordained by God himself, not excepting that of master and servant in the shape of either *bought* or *hired* labor. Hence, if there is to be an emancipation of labor from capital, will not a new or garrison form of government be then needed? It is because heretofore it has been found impossible to ignore the necessity of labor, no government has heretofore existed, not excepting our own, that was not based upon *artificial distinctions of class or the natural distinctions of race*. And hence, as has been said, the people of the North will, sooner or later, understand things differently from what they do now; *but with this change of opinion the progress of events will develop new difficulties in the solution of which all their energy and ability will be demanded to save themselves*. The single question of readjusting their industrial interests is no trivial matter, and, after all, if they direct their industry in new channels and new pursuits, of what avail will that be unless they find a market? Before the late great struggle the people of the Middle, Eastern and Western States sold in the South *four times more* than they sold to the world beside. When and where will they find such a market? For, it is certain, for years the South will not be more than self-sustaining, if that. And hence it is I have so earnestly urged upon the people of the South the conviction that whatever is done for them they must do for themselves.

Besides all this, the people of the South should not only re-

cognize the fact that whatever is done for them, they must do for themselves, but also that it may not be always in their power to do for themselves what they can do *now*. The fate of Esau is not related as a mere isolated fact, but, like everything else of a like character laid down on the same high authority, is designed to illustrate a general principle. Accordingly, we find every man's life that of Esau, inasmuch as there are times when he could have done such and such things but would not, and times when he would but could not. Cæsar meant the same thing when he said, "the Rubicon is passed, the die is cast." Shakespeare meant the same thing when he wrote, "there is a tide in the affairs of men, which, taken at the flood, leads on to prosperous fortune, but neglected, all the voyage of their lives is bound in shallows and in quicksands." And what is true of the individual man is true of states and nations of peoples, because these are made up of individuals. In the life of man we call these turning points events—in the history of peoples, epochs, junctures. And they are turning points because causes have then passed beyond the power of mortal man to arrest their operation. They will produce their legitimate results in obedience to those laws which the Almighty has impressed upon the material and the immaterial, animate and inanimate, and we are bound to accept the consequences be they good, bad, or indifferent. Let a heavy body be thrown upward it will fall to the earth's surface by the laws of gravitation, and where such heavy body is thrown up no power can prevent the result, because we cannot resist those laws that control its motion. The laws that govern in the moral and political world are not so clearly defined or so well understood as in the physical. But such results are not more certain in the physical world than in the moral and political world. To ignore them would be to ignore the providence of God in the relations of causes and effects. To deny them would be tantamount to a denial of the sovereignty of God.

Now is a turning point with us, and in whatever direction we move the *end* may be seen in the *beginning*. If there has been doubt, enough has been said to make it clearly manifest our only hope of saving ourselves consists in preserving a true and enlightened public opinion, and that too without the power of enacting laws in conformity thereto, and thereby enforcing it; but the segregation of the races by the very sacrifices it would cost would greatly strengthen and intensify the true public opinion. And if, as is well known, public opinion was defeated by the execution of positive enactments, it certainly, by the segregation of races, may be made powerful

enough to resist conformity to laws which permit but do not command, as in the case of intermarriage between the races, which is permitted but not commanded, notwithstanding the extraordinary and unscrupulous efforts North and South, direct and indirect, that are made to debauch and degrade that public opinion. Not only as recognizing the truthfulness of the foregoing remarks in regard to the rapid progress of events, the fact that causes producing them have passed beyond the power of human agency to arrest their operation, presenting in their development to the people of the North into whose hands not only the government of the United States but the African also has passed — questions of the greatest magnitude and gravest import in regard to the readjustment of their industrial interests — the doctrine of equality, the conflict of labor and capital, and last but not least the question whether such organism of government can be devised as will give stability and durability to governments based upon neither the artificial distinctions of class nor the natural distinction of race. Should we become involved we should be utterly, hopelessly crushed and ruined; our only reliance, the true public opinion, completely debauched and degraded, and we ourselves not only doomed to endless degradation but involved in new scenes of strife and bloodshed. Hence the fraud and the force, and the art and the stratagem of those who seek to place this devoted section *nominally* in the Union, so as to make it, through the African, as in the past it has been through our own race, a mere foot-ball in the presidential contest; the fruits of which we are to-day called upon to mourn in sackcloth and ashes. Need I ask if such were the result in the green tree what will it be in the dry? To-day we may segregate and save ourselves through the true public opinion. Let us become involved as stated, and we *cannot*; for however earnestly we might strive, as Esau found no place for repentance though he sought it diligently and with tears, so we should find no place of safety, no door of escape from endless degradation, unless, indeed, it be through the expulsion of the white population from this section. In this connection I will quote from Mr. Calhoun a prediction more than thirty years ago in the U. S. Senate, "I look not for aid," said he, "from this government or to the other States; not but that there are kind feelings toward us on the part of the great body of the non-slaveholding States; but as kind as their feelings may be, we may rest assured that no political party in those States will risk their ascendancy for our safety. If we do not defend ourselves, none will defend us; if we yield, we will be more and more pressed as we recede; and if we submit we shall be

trampled under foot. Be assured that emancipation itself would not satisfy these fanatics; that gained, the next step will be to raise the negroes to a social and political equality with the whites; and that being effected we should soon find the condition of the two races reversed. They and their northern allies would be the masters and we the slaves. The condition of the white race in the British West India Islands, bad as it is, would be happiness to ours. There the mother country is interested in maintaining the supremacy of the European race. It is true that the authority of the master is destroyed; but the African will still be a slave, not to individuals but to the community; forced to labor not by the authority of the overseer, but by the bayonet of the soldiery and the rod of the civil magistrate." How literally fulfilled by the enfranchisement of the Africans and the disfranchisement of the white population of Jamaica already is far more than predicted. Why, it would be easy to show, and when shown would satisfy the most skeptical, our own fate is not exaggerated, whether looking to the results of Mr. Calhoun's prediction already fulfilled or to what has been said in these reflections. This is the question that should be pondered by every Southern man,—*if it has been found impossible for the strongest and most powerful government of modern times to save the European race from degradation first, and finally from extinction, now rapidly becoming an accomplished fact,—how shall we escape when the government extending its dominion over us is using all its means and power to bring about the very result the British government sought to avert but could not?* Ten years after the remarkable language already quoted from Mr. Calhoun, almost to a day, he again employed the following language in the U. S. Senate. In advocating certain resolutions he had introduced he said, "We foresee what is coming and move with no other purpose but to protect our portion of the Union from the greatest of calamities—not insurrection but something worse. I see the end if the process is to go on unresisted; it is in time to expel the white population from the Southern States and leave the blacks in possession. The only escape from which will be found in the policy of segregation unless indeed we have deliberately made up our minds to become the equals of slaves, and slaves where we are equals; for in the admixture of the races the mongrel race resulting would be *literally* slaves, and could never rise above the level of a servile race. I care not what country they occupy nor what government extends over them its dominion, and I care not whether the policy proclaimed be social and political equality or equality before the law, such will be the

result at last as certainly as day and night succeed each other, and needs not the test of time that proves all things; for time has shown the same result under circumstances which the ablest and wisest have thought rendered such results impossible. But what if after all the African, backed by the military policy and government of the United States, should determine on our expulsion? What then? Do not dismiss the question as presenting an impossible result. The Africans, like all inferior and subordinate races, seek seclusion instinctively, as, for instance, the Chinese and Japanese—because they are instinctively conscious of their inability to enter into competition with a superior race. So that segregation would not only save the white race but it would satisfy and save the African. By the adoption of this policy in regard to our industrial interests we should need in grain-growing and stock-raising not one-tithe of the laborers in the cultivation of the staples; this much we could secure, so that *pari passu* each policy could progress, and we should soon find ourselves in a condition comparatively of peace, plenty, repose and safety. My countrymen of the South, what will you do? Thirty years ago you were solemnly admonished that you must do for yourselves whatever was done for you—that if you were saved you must save yourselves. To this you turned a deaf ear, and listened to those who thought the northern wings of their respective parties would not only save you but save the Union. And then, when the conflicts of party were succeeded by the conflict of arms, they would save you by foreign intervention, to which end many and brilliant victories were achieved, and a noble army of heroes and martyrs was sacrificed. What has been the result? You have failed, signally failed, in every respect when you relied upon others instead of relying upon yourselves. I do not wish to add one drop to your cup of affliction, already full to overflowing, by bitter and unavailing regrets; but I desire to speak the truth. You might have saved the Constitution and the Union of the Constitution—your institutions, social and political, without shedding a drop of blood, or any additional expenditure of treasure. I know you were in the minority; but as Constitutions were designed for the protection of minorities, it was peculiarly the duty of a minority to preserve and defend their constitution. Besides, with the efficacy of written constitutions is indissolubly connected all hope of governments of the free form; and if much was required, to you much had been given, for who ever had so noble a heritage in the area and extent, soil and climate and productive capacity of the country you occupied. And you were the only people, and yours the only country in modern times, where for their

benefit institutions had been established that proved not only a permanent and durable foundation for governments of the free form, by producing an entire and complete harmony and identity of interest between capital and labor, but likewise, while they taught its value, inspired a love of liberty. And again recurs the solemn and momentous question, What *now* will you do? The answer to this depends upon the answer to another question; Do you *realize* your true condition, and how and why brought about? These reflections show what that condition is; while in their First and Second Parts, it has been shown *how* it was brought about, as also it is shown in the extracts of the speeches of Mr. Calhoun, just quoted; for I again repeat, when did others ever do any thing for him who never did any thing for himself? In failing to do for yourselves, you ignored the Providences of God in the relation of causes and effects, and passed, without realizing it, that turning point which marked an epoch in your history. Hence it was that mighty man, who, when he spoke, "spoke to an audience reaching far down the stream of time, and covering millions of square miles," more than thirty years ago exclaimed; "I dare not hope that any thing I can say will arouse the South to a due sense of danger; I fear it is beyond the power of mortal voice to awaken it in time from the fatal security into which it has fallen." But *why*? The explanation of your condition is to be found in the corollary he deduced from the great truth announced, and as beautiful as true, that there is deeply planted in the moral and political world, by an All-wise and All-powerful Being, a principle of retributive justice that never fails, sooner or later, to recoil upon its authors; and which, while it explains if it arouses, proffers the fullest assurance of your final deliverance; for if aroused, you will realize the delusion by which you have so long been held spell-bound and partially demented, and that delusion will be dispelled. The lethargy and sloth by which you have been so long beguiled, deceived and betrayed will be shaken off; you will look neither to the government of the United States, nor to the people of the North, but relying upon yourselves, you will move forward with an unshaken confidence in the Providence of God; and thus confiding, you can not doubt that His unseen hand, so plainly manifest in bringing together two races of traits so distinctive and widely different, and for so long a time uniting their destiny without the consent of either, and without the consent of either sundering that relation between them, will be again made manifest to avert the only fate to which you would be unequal, and a fate impossible to those whose destiny He controls. Will you heed the admonition? For if neither

mortal voice of man, nor the teachings of retributive justice can arouse, your doom is sealed. In that case, the judgment of the righteous judge is, "Take from him—take from him even that which he hath."

ART. III.—CHEAP RAILROADS.

THAT the railroad system of the United States must undergo revision and improvement is becoming daily more obvious. The first reform must consist in consolidating all radial lines under the largest possible schedule. There must be no transfer from road to road, and no charge for transfer from road to water. The railroad must be assimilated as nearly as possible to ocean transportation. That is, it must carry long distances without delay or charge of transfer, and it must transport in one direction with the same cheapness and rapidity that it does in another. We are inclined to approve the transportation plan of Mr. Sherwood so far as it contemplates the adoption of these general principles, but we doubt whether a great railroad can be worked like a canal or turnpike. The common carrier and owner of the right of way should be combined in the same administration for practical reasons. Perhaps Mr. Sherwood may not be aware that the charter of the Baltimore and Ohio Railroad was granted on the principle proposed by him. It was expected to be used as a wagon road. The introduction of steam proved that a company could supply whole motive power with more economy than individuals could possibly do, and the original plan was abandoned.

We agree perfectly with the writer that the cost of obtaining traction by insistent weight is far too great. It is very plain that if the strength of material could be enhanced by the adoption of steel, the shock and abrasion would be greatly diminished, but the railroads of the North and North-west cross some very heavy grades, and the insistent weight must be carried over the whole road to be ready for use at the stop points. The dilemma in which the railroads are placed is very obvious. If they reduce the weight of the locomotive they diminish in the same ratio its capacity for draught. The reduction of rail weight is, of course, an economy unless the superior cost of carbonized iron shall neutralize this advantage, and this we are satisfied will not be the case. We are glad to have scientific and practical opinion that the lighter rails will present the same rigor and elasticity, and will quadruple the durability of the road bed. Still the question remains, how are we to get the same traction upon a reduced insistent weight? The shape of the rail will be determined by calculations and confirmed by experiment.

The suggestion that the reduced weight of rail and the insistent weight of locomotive may be substituted by a new mode of mechanical adhesions is well worth experiment. It must not be forgotten, however, that the additional weight of a third rail will neutralize somewhat the economy of the

lighter steel rail. We would remind Professor Forsbey that this experiment of the third rail has been made in Europe. Moreover, an invention for applying mechanical adhesion at special points was tried by the Legislature of Virginia, to test the possibility of substituting this mode of gaining traction without the cost of bringing down the grade of roads, or carrying a useless weight of locomotive.

We commend the views of Professor Forsbey to our readers. They are elementary to a great railroad reform which is of indefinable importance to the Southern States, and to the extension of long lines into Mexico and to the Pacific Ocean.—EDITORS REVIEW.

TO CHEAPEN FREIGHTS ON RAILROADS, WE MUST CHEAPEN THE
ROADS THEMSELVES.

The great interest awakened in the American public, within the past year, on the subject of CHEAP FREIGHT RAILROADS, has been mainly effected by the pen and agitations of Mr. Lorenzo Sherwood, a writer and thinker of much ability and perseverance on matters of internal improvement.

The object aimed at in the present movement is undeniably a great desideratum, second only to the productive interest of the country. Let us see whether the treatment of the subject, by its leading advocate and the public men who have framed bills for Congressional regulation and aid, have not commenced in the middle of their subject. A most careful study and analysis of the public action, including the pamphlet published in May last, by the Secretary of "The National Anti-monopoly Cheap Freight Railway League," impresses me that the whole system is a series of conclusions without adequate premises.

Without adopting as a whole the practicability of the scheme, or at present entering upon any argument or criticism of the general plan or its details—though I believe that they will bear some of both—I shall venture to enter the lists of its advocates, and endeavor in my humble way to furnish some of the wanting premises.

The whole railroad system is too heavy, and too enormously expensive for general use.

Such railroads can never profitably reach the vicinity of any large proportion of the public needing them.

The rails on a first class road weigh seventy pounds the yard, or forty-six pounds the running foot of single track, or about one hundred and twenty-one tons to the mile. Adding chairs and spikes at three per cent.; and double tracks for turn-outs and stations at two per cent.—we have about one hundred and twenty-seven tons per mile for the weight of the iron track.

But why so heavy a rail on the first-class roads? Why not use fifty pounds iron, amounting to only about eighty tons per mile?

Because the weight of the locomotives and rolling stock is so great as to require the stiffness of the heavy rail. The flexure of

small rails, under such burdens in motion, is so great as to wreck the track and loosen and destroy the rails.

But why the great weight of locomotives and rolling stock?

The engines are made heavy to give *traction* to the driving wheels, sufficient to draw the enormous burden of train and freight.

What do these great weights amount to in round numbers?

An average locomotive, west and south of the *Alleghanies*, is thirty tons; its train of thirty or forty freight cars is one hundred tons; and its freight two hundred tons—including locomotive, more than one-third the load, for which *traction* must be provided, is made up of naked train.

The track that has to bear this enormous shock, even at the moderate speed of ten miles an hour, requires to be heavy and well founded.

Accordingly, the road-bed has to be made of solid and perfectly draining materials. The wood superstructure must have about ten feet, broad measure, per running foot of track; and the rails must weigh some seventy pounds per yard each, or one hundred and twenty-seven tons per mile!

Hence, in fine, the average cost of American railroads is near \$25,000 per mile!

This prodigious investment has to be repeated, as to its wood portions, every four or five years; and its iron rails, where there is heavy traffic, have to be replaced every ten years; and its locomotives and rolling stock about once in ten years; the old iron and castings yielding but a small portion of their original value. Thus the cost of the fifty thousand miles of American railroads reaches the fabulous sum of one billion two hundred and fifty millions!

Can we realize that this stupendous amount of property is *mainly consumed in twenty years!*

Shall we not pause in our astonishment and inquire whether the engineering genius of the age cannot suggest some mode by which we can reduce this great investment and this profligate destruction of property—make more durable, and greatly increase the number of miles of our next edition of American railroads?

Let us now resume our discussion of the locomotive.

The iron horse has not been materially improved in the last twenty years. He has grown a little more corpulent; but neither consumes less provender, makes greater distance, nor draws a heavier load. He is an "old foggy," and so is his track of iron rails. Invention seems to have turned in every other direction, and left the old horse with his heavy loads to worry his life out transporting himself; and to crush his track to splinters every ten years!

The traction is confined to two, four, or at most six, bearing points of the driving wheels. The flexure of track and shock of motion is prodigiously destructive; in fact the servitude is greater

then than under the whole train beside. For the freight and weight of a burden car—say weighing two tons, and bearing eight tons freight—is distributed over as many bearing points as the locomotive of thirty tons, and each flexure or shock of the track produced by a burden car is only one-third that of the locomotive;* and ten burden cars would do less damage to the track than one engine.

Why not reduce the pressure on a few points by multiplying them?

Prejudice and long habit are greatly in the way. If no other improvement were practicable, the number of drivers on the engine should be doubled, and so geared as to be released at pleasure of the engineer, and re-engaged when greater traction is demanded.

But this is only a small part of the revolution railroads are destined to undergo.

What is proposed?

My reply is to *reduce the weight of every metallic portion of railroad and rolling stock by one-half*; and substitute **STEEL FOR IRON** in nearly every part!

The manufacture of steel has undergone the most wonderful revolution. BESSEMER'S name is immortal, and SEAMEN'S stands next on the roll of fame, for the blessing mankind is to enjoy from their improvements in the production of steel.

Suffice it here to say, what is familiar to the engineer that pretends to keep pace with the progress of invention and industry—that, seven years ago, a casting of steel was limited to a ton, and that now thirty tons are made from a single crucible: that it can now be produced from the *pig iron directly*, instead of the best Swedes iron being roasted in charcoal; and that the present cost of rolled bar steel is little more than double the cost of iron per pound, while its strength and durability are double, treble, or quadruple that of iron.

Let us make our entire roads and vehicles of steel, and reduce their weight by one-half.

Then, if the locomotive weighs only fifteen tons, and rests on ten drivers, we shall have only three thousand pounds bearing on a single point, instead of ten thousand or fifteen thousand as at present constructed. In this case the traction points would sustain but little greater burden than those beneath the freight cars. And as the total inertia, or load, has been reduced by one-sixth, the traction to be provided is in like manner reduced; so, for a stronger reason the locomotive may be reduced in weight.

The rails may be reduced in solid section by about one-half, still retaining most of their rigor, increasing the elasticity, and quadrupling the durability of rails, embankments, and masonry.

* The reader will please bear in mind that the destructive effect of blows given is chiefly due to the violence of each blow, and not the sum total of momenta. Slight blows often repeated do little of the destruction of a few heavy blows.

In order to preserve as much of the rigor of the rail as possible in reducing its size, we shall probably have to change its form. The inverted **T** will aid in preserving the rigor, without materially altering its other merits.

The durability of any work furnishes a most interesting element of its economy.

If an engine or a track will last only ten years, it must charge twenty per cent. on its value to earn ten per cent.; whereas, if it will last forty years it may be used at twelve-and-a-half per cent. during its life, with precisely the same net earnings.

The experiments made of steel rails, in comparison with iron, at the depot of the Great Western Railway in London, showed that the traffic they would severally bear compares as seventeen to four! Thus, the average steel rail would last the traffic of our roads for forty years or more.

I predict a like durability in the steel locomotive and rolling stock. And a steel bridge, instead of the clumsy cast and wrought iron structures, is already a tested thing across the water. They are so light and airy, and so safe withal, as to demand a place on all future railroads. They will last three score and ten years, or probably a century, and not be broken down by their own weight and vibrations, as all iron bridges are.

I therefore urge the adoption of a radical change in our railroad system, reducing all metallic parts by at least one-half their weight, and substituting steel for iron in the construction of tracks, rolling stock, bridges, and buildings.

And is this all the change proposed? It would appear to be sufficient for one innovator.

But it is *not* all. I propose a radical change in the construction of the track, and a modification of the rolling stock to suit the new condition.

This is an age of novelties, and the mechanical construction of everything, from a garden hoe to a tunneling machine or a monitor, has undergone a total revolution in these twenty years of railroad slumber.

I bespeak the calm and deliberate consideration of my professional brethren of the following suggestions:

LET THE RAILROAD TRACK HAVE THREE RAILS, two of wood and one of STEEL. Let the outside tracks have good hard wood stringers, well founded on heavy cross-ties, with vertical thickness of at least six inches, and bearing of eight inches (or such additional dimensions as experience should prove adequate to resist flexure between ties, and bear the abrasions of wear till decay should render replacement necessary.) Instead of chairs at the ends of the wood rails, let them lap by a two-foot splice, with vertical bolts, heads countersunk, to hold them in place.

Let the wheels, both drivers and truck wheels, have no flanges, but broad tread on the middle of the stringers.

Let the third rail be elevated on its stringer and made of steel,

having the inverted (**I**) form, with half-inch walls, three-and-a-half inches tread, and two inches summit; or such other dimensions as experience may suggest. Let this middle rail be embraced in a recess of the middle wheel, which shall tread upon the summit and the two feet of the rail. The two cheeks of this central wheel will supply the flanges and keep the cars on the track.*

Let the central rail have corrugated vertical sides; and for auxiliary traction on grades, and in starting and arresting the train. To avail of this aid let there be two horizontal drivers, so geared to the engine as to be engaged and released by the hand of the engineer; and, when engaged, made to grasp the rail with their tires corrugated to correspond to the furrows in the rail.

It is obvious that if we increase the number of drivers their friction on the wood surface of the rails would be the less destructive; and, since the friction of the metallic tyre upon a wood surface is nearly three times that of iron upon iron, we may reduce the weight of our locomotive still further, until its bearings shall be equal to the bearings of the other wheels.

This is relied upon by the writer as one of the material merits of the new system proposed. And though he would not ignore the fact of rapid abrasion and disintegration of wood, under the tread of trains, and the friction of drivers, he would recall the attention of the professional reader to the uses of the auxiliary tractors on the central rail, that shall bear the main strain of starting and stopping, and of the up grades; as also to the cheapness of wood as compared with iron, even should replacement and adjustment be frequently necessary.

Should the great traffic on any lines, or other experience render it necessary, the stringers could be shod with sheet iron or thin bar iron, or plates of steel, at small expense compared with solid rails. This, however, would be at the expense of the loss of traction and reduced locomotive weight.

Doubtless, in the first introduction of a system so novel, many difficulties would have to be met and provided for by the engineer. He will, at least, agree with me that a desideratum so imperative will justify much expense and patient effort, and a fair and candid trial. Success would save half the cost and treble the durability of our railroads.

And now, having submitted the outline of a method for *cheapening the railroads themselves*, we are prepared to advocate, with the freight reformers, a system of *Cheap Freight Railroads*.

In another paper we propose to examine the feasibility of the system submitted by Lorenzo Sherwood and "*The National Anti-Monopoly Cheap Freight Railway League*."

GALVESTON, TEXAS, November, 1867.

* Such a rail would weigh about thirty-six pounds to the yard, or thirty-five tons to the mile, including spikes and double tracks, etc.

ART. IV.—THE POLAR SEA.

OBJECTIONS TO THE THEORY OF THE EXISTENCE OF AN OPEN POLAR SEA,
BY J. B. KNIGHT.—READ BEFORE THE NEW ORLEANS ACADEMY OF
SCIENCES, AT THEIR REGULAR WEEKLY MEETING, HELD JUNE 10TH,
1867.

THE fact that navigators, in attempting the discovery of a North West Passage into the Pacific, have from time to time, found open water in the Northern Ocean, has gradually built up a popular belief in the existence of an open sea surrounding the North Pole, at all times free from ice, the shores of which teem with animal and vegetable life.

The belief has so far taken hold of scientific men, that many able minds have ceased to weigh the question as to whether or not such a sea actually exists, and have devoted their attention to speculations upon its cause.

On examination, it will be found that the belief is built upon nicely and ingeniously drawn theories, "which have yet to be confirmed by observation." Let us weigh some of these theories, and the proofs offered to sustain them.

As this subject was called up by Dr. Fontaine's paper, we will first notice his theory, which is, that the open Polar Sea is due to the increased heat, derived from the central fires of the earth, from the crust being thinner at the poles by reason of the polar diameter being less than the equatorial diameter.

If the earth is a molten mass, with only a thin crust, which is gradually thickening by cooling, it would be most natural to expect the crust at the poles to be thickest; as there, the surface receives less of the external heat of the sun to compensate for radiation, which we have no reason to doubt being equal in all parts of the earth.

This would be illustrated by supposing we had cast a globe of metal, of the shape of the earth, and wished it to cool first at its poles. By causing this globe to revolve on its axis, before an intense heat applied to its equator, we should certainly maintain the high temperature at the equatorial circumference longer than at its poles. Operations based upon this principle are not unknown to workers in metals.

There is an immense and constant current flowing out of the Arctic Ocean, through Davis' and other straits, as is fully proven by navigators. Lieut. De Haven, (when in command of the First Grinnell Expedition in search of Sir John Franklin,) had his ships, (as was the British ship "Resolute" on another occasion,) frozen up in a vast field of ice, and, while retaining their positions in the ice, were drifted more than a thousand miles to the south.

This immense volume of water must be replaced, and we accordingly find, setting into the Arctic Ocean, a vast current underlying the outflowing one, as is positively proven by Dr. Kane, Midship-

man Griffin, R.N., Captain Duncan, of the British whale-ship "Dundee," and others, who, at different times, saw icebergs making their way rapidly to the north, against the wind and surface current, and, in some cases, forcing themselves through fields of solid ice. These icebergs could only have been propelled against such obstacles by a powerful current into which their lower extremities reached.

What the temperature is of this under current is not positively ascertained, but observations prove that this one is no exception to the rule, that all the currents flowing from the equator toward the North Pole are warm ones. There is also a current flowing into the Arctic Ocean, through Behring's Straits, which is known to be a warm one.

If, then, all the currents flowing into the Arctic Ocean are warm, and those coming out are cold ones, it cannot be possible that any local source of heat exists there.

Let us see if there is sufficient evidence to establish the fact of an iceless sea in the Polar Ocean. As early as 1596 there was seen, to the east of Nova Zembla, water which was assumed to be the Polar Sea, until later it was found to be of very limited extent.

Baron Wrangell, in an expedition on sledges, saw, at a distance of some forty miles from the coast of Arctic Asia, what he termed a "vast illimitable ocean" of open water, which has since proved to have been an illusion.

Captain Parry announced to the world that he had discovered the *Open Polar Sea*, at a point where, a few years later, the vessels of Sir Edward Belcher were frozen up a whole winter.

Dr. Kane accompanied the First Grinnell Expedition in search of Sir John Franklin, as senior medical officer, and was also its historian, and afterward commanded the Second Grinnell Expedition, which left New York, May 30th, 1853, and was absent more than two years.

He spent both winters in Rensselear Harbor, in latitude $78^{\circ} 28'$ N. and longitude $70^{\circ} 40'$ W.

On the 4th June, 1854, Morton and Hans were sent out, with instructions to push as far north as possible, in search of evidence of the fate of Franklin, and of the open sea. They were absent about two months, and upon returning, reported that, after traveling more than three hundred miles nearly due north, over a continuous field of ice, they came unexpectedly upon a channel so open that a fleet of frigates might have sailed up it, and on the shores of which they found Arctic plants due to a much lower temperature than that through which they had been traveling. Morton describes this open water as extending as far as the eye could reach, from an elevation of more than 500 feet, and having all the characteristics and appearance of being permanently free from ice. There is, probably, little doubt that Morton saw open water, but I would direct attention to his bringing back with him only two or three specimens of the vast number of plants he describes as having seen there, and to the very evident caution with which Dr. Kane endorses his account of what he saw.

Dr. Hayes spent the winter of 1860-61 at Port Foulkes, about 78° 15' north, and only a short distance from Rensselaer Harbor, and *within one day's walk* of his vessel he found *open water*, where, in 1853, '4 and '5, Dr. Kane found only solid ice, and over which Morton traveled to reach *his open sea*.

Of this Dr. Hayes says: "The existence of this open water greatly puzzles me. . . . It is probably merely local, and depending on the currents and winds. In 1853, '4 and '5, no such water was observed."

He also describes the same atmospherical phenomena as were observed by Morton near *his open sea*, and says: "Flocks of speckled birds came to shelter themselves under the lee of the shore, and warm their feet in the water the winds would not let freeze."

A little later this open water approached, says Dr. Hayes, "until the music of its waters, dashing against the shore, was distinctly audible from the vessel."

In the spring of 1861, Dr. Hayes made his great effort to reach the open Polar Sea, which was the avowed object of his expedition, and after journeying to the north as far as he could, he says, in a record left on the spot: "This point, the most northern land that has ever been reached, was visited . . . May 18th and 19th, 1861.

. . . . My observations place us in lat. 81° 35' N. and long. 70° 30' W. Our further progress was stopped by *rotten ice* and *cracks*. Kennedy Channel appears to expand into the Polar Basin, and satisfied that it is navigable at least during the months of July, August and September, I go hence to my winter home to make another effort to get through Smith's Sound with my vessel after the ice breaks up."

This, remember, is the *open sea* of Dr. Kane, where Morton reported the shores and water entirely free from ice as far as the eye could reach, from an elevation of more than 500 feet, and here Dr. Hayes is stopped by *rotten ice* and *cracks*; and he describes the channel as more or less choked with ice, which seems to grow less in the distance, until, merged with water-sky, it is difficult to distinguish the horizon.

As I once before had occasion to say, there are few men of the achievements of Dr. Kane, who wrote so modestly, and this, with the fact that he strove to be *truthful* rather than *accurate*, renders his testimony of great weight.

After having made one trip to the Arctic Ocean, and while organizing the Second Grinnell Expedition, he was so fully impressed with the belief of the actual existence of an open sea there, that in a lecture he delivered before the American Geographical and Statistical Society, 14th December, 1852, he seems to consider the existence of such a sea settled, and the only problem to be solved was how to get to it. But, in the history of his second expedition, after giving the outlines of the supposed discoveries of his predecessors in Arctic explorations, he says: "All these illusory discoveries were no doubt chronicled with perfect integrity, and it may seem to others, as since I have left the field it sometimes does to myself, that my

own, though on a larger scale, may some day pass within the same category."

This is a great modification of his confident tone in 1852, and shows that the further he prosecuted his researches, the less positive is he of the existence of an open Polar Sea.

That there is at all times, in the Arctic Ocean, open water, more or less free from ice, will not be denied by those who have studied the progress of polar exploration during the present century; but I do assert that we are without sufficient evidence to prove that this open water is constant in its location and extent, or that there is a space surrounding the poles that is permanently free from ice.

I am supported in this assertion by some excellent proofs.

It has been shown that no two navigators have found the open water in precisely the same place or of the same extent. Lieut. Maury, in his "Geography of the Sea," says (page 175): "This open sea in the Arctic Ocean is probably not always in the same place. It is, probably, always where the waters of the under current are brought to the surface."

I have alluded to this under current before, and when it is understood that it is a warm one, and carries *in* the water to supply the place of that carried *out* by the surface current, and that these waters, in order to flow out, must rise to the surface, have we not sufficient cause for the higher temperature of atmosphere where this rise takes place?

There is abundant proof that, within a comparatively late period, there has been a great change in the climate of different parts of the Arctic Ocean.

Dr. Kane, in speaking of the locality in which he spent the winter of 1853 '4 and '5, says: "There is no doubt on my mind that at a time within historical and even *recent* limits, the climate of this region was milder than it is now. I might base this opinion upon the fact, abundantly developed by our own expedition, of a secular elevation of the coast line. But independently of the ancient beaches and terraces, and other geological marks which show that the shore has risen, the stone huts of the natives are found scattered along the line of the bay in spots now so fenced in by ice as to preclude all possibility of the hunt, and, of course, of habitation by men who rely on it for subsistence.

"Tradition points to these as once favorite hunting grounds near open water.

"At Rensselaer Harbor, called by the natives Annatok, or the Thawing Place, we met with huts in quite tolerable preservation, with stone pedestals, still standing, which were used to sustain the carcasses of the captured seals and walrus.

"Sunny Gorge, and a large indentation in Dallas Bay, which bears the Esquimaux name of the Inhabited Place, showed us the remains of a village, surrounded by the bones of seals, walrus, and whales, all now cased in ice."

It is generally conceded that the warm water of the Gulf Stream,

flowing to the northward and eastward, is the cause of the climate of the British Islands being so much milder than climates in the same latitude elsewhere. Then why not the warm under current flowing into the Arctic Ocean, be sufficient cause of the open water and mild climate found in some parts of that sea?

Wherever the warm under current ceases to flow, and rises to the top preparatory to flowing south as a surface current, there we might expect to find open water; and as there are many causes which operate to vary the place of this rise of water, I think this sufficient explanation of the change of *location* of the open water, and of the changes of climate spoken of by Dr. Kane.

I therefore maintain: that there is no local source of heat in the Arctic Ocean to cause the presence of a sea permanently free from ice. That the open waters of Arctic navigators are sufficiently accounted for by the warm currents known to flow *in* to compensate for the cold currents flowing *out*. That the great changes of locality of the open water preclude the possibility of their being of very great extent; and that we are not in possession of sufficient proof to sustain the theory of an iceless sea surrounding the North Pole.

ART. V.—RECOLLECTIONS OF MEXICO; OR, ROAD AND MOUNTAIN.

(Continued from February Number.)

A NEW CHAPTER IN THE ANCIENT HISTORY OF AMERICA—DISCOVERY OF AMERICA BY THE NORTHMEN IN THE TENTH CENTURY—THE CHARACTERISTICS OF THE COUNTRY AND COAST DESCRIBED BY THEM—SNORRE, THE FIRST YANKEE BORN ON THE SOIL OF NEW ENGLAND, IN 1007—WHITE MEN FOUND BY THE NORTHMEN IN AMERICA BEFORE THEM—A NEW VERSION OF MACAULAY'S NEW ZEALANDER CONTEMPLATING THE RUINS OF LONDON—HUMBOLDT AND OTHER AUTHORITIES ON THE EARLY DISCOVERY OF AMERICA—THE FECUNDITY OF THE ANGLO-AMERICAN RACE.

CHAPTER VII.

It is a source of surprise to many, that notwithstanding the numerous and various speculations regarding the ancient races of America, little or no allusion, in this connection, has been made to the Europeans of our own race, the fact of whose existence on this continent, at a remote period, we have now positive evidence of.

It is said, the older we grow the more it becomes evident that historic knowledge is as capable of extension as physical knowledge. If this be true, how many great discoveries remain to be made?

That America was visited by Europeans five hundred years before Columbus was born is now placed beyond dispute. Many

writers of repute, of a comparatively recent date, have thrown much light on this interesting subject: and, considering the remoteness of the period of which they treat, are singularly free from conflict.

In this connection, the following extracts cannot but be read with interest:

"The Dane Garder,* of Swedish origin, was the first Northman who discovered Iceland in 863. Only a few out places of this country had been visited, about seventy years before, by Irish hermits. Eleven years subsequently, or in 874, the Norwegian Ingolf began the colonization of the country, which was completed during a space of sixty years. The colonists, many of whom belonged to the most illustrious and most civilized families in the North, established in Iceland a flourishing republic. Iceland was, therefore, the cradle of an historical literature of immense value."

"The situation of the island, and the relationship of the colony to foreign countries in its earlier period, compelled its inhabitants to exercise and develope their hereditary maritime skill, and thirst for new discoveries across the great ocean."

"As early as the year 877, Genubiorn saw, for the first time, the mountainous coast of Greenland. But this land was first visited by Erik the Red in 983, who, three years afterwards, in 989, by means of Icelandic emigrants, established the first colony on its south-western shore, where afterwards, in 1124, the Bishop's see of Gardar was founded, which subsisted for upwards of 300 years. The head firths, or bays, were named after the chiefs of the expedition.†

"On a voyage from Iceland this same year (986), Biarne, the son of Heriulf, was driven far out to sea towards the southwest, and for the first time beheld the coast of the American land, afterwards visited and named by his countrymen. In order to examine these countries more narrowly, Leif the Fortunate, son of Erik the Red, undertook a voyage of discovery thither in the year 1000. He landed on the shores described by Biarne, detailed the character of these lands more exactly, and gave them names according to their appearance: Helluland (Newfoundland) was so called from its flat stones; Markland (Nova Scotia) from its woods, and Vineland (New England) from its vines. Here he

* The above extracts are translated from *Antiquitates Americanae, sive Scriptores Septentrionales Rerum ante-Columbianarum*, in America. *Caroli Christiani Rafn*. HAFNLÆ. Typis officinae Schultzeianæ 1837. Mr. Rafn was a Dane, and, from the name, a descendant of the old Northmen.

† "In very early times," says Dr. Hayes, the Arctic explorer, in a recent lecture delivered by him at Chicago, "Greenland, which is substantially the home of the icebergs, was inhabited; but in the year 1600 the people of this country had all disappeared very mysteriously, and nothing remained to tell that the lower part of the land had ever been known to man except a few Runic (*the language of the ancient Northern nations of Europe*) inscriptions which Edgerton found upon the rocks in 1721, when he attempted to colonize the island, for it is supposed to be an island."

remained for some time, and constructed large houses, called Leifsbudir (Leif's Booths). A German named Tyrker after him, who accompanied Leif on his voyage, was the man who found the wild vines, which he recognized from having seen them in his own land, and Leif gave to the country its name from this circumstance. Two years afterwards, Leif's brother, Thorwald, repaired thither, and in 1003 caused an expedition to be undertaken to the south along the shore; but he was killed, in the summer of 1004 on a voyage northwards, in a skirmish with the natives."

The most distinguished, however, of all the American discoverers is Thorfinn Karlsifna, an Iceland, whose genealogy is carried back in the old Northern annals, to Danish, Swedish, Norwegian, Scottish and Irish ancestors, some of them of royal blood. In 1006, this chief, on a merchant voyage, visited Greenland, and there married Gudrid, the widow of Thorstein (son of Erik the Red), who had died the year before in an unsuccessful expedition to Vineland. Accompanied by his wife, who encouraged him to this voyage, and with a crew of 160 men on board of three vessels, he repaired, in the spring of 1007, to Vineland, where he remained for three years, and had many communications with the aborigines. Here his wife bore him a son, "*Snorre*" (the first Yankee born on the soil of New England), "who became the founder of an illustrious family in Iceland, which gave that island several of its bishops. His daughter's son was the celebrated Bishop Thoriack Runolfson, who published the first Christian code of Iceland.*

* The Danes are said to be as careful in preserving old documents, and clinging to the traditionary evidences of their past history, as the Moors are said to be in preserving the evidences of their occupation of Spain. "The identical key of their house in Granada" may be found hanging in a conspicuous place in more than one Moorish house, and some are said to entertain the idea that they will one day return and occupy them.

More than twenty years since, while making the trip between London and Hambergh, I made the acquaintance of a Danish gentleman on board the steamer. As the vessel ploughed her way within sight of the English coast, our conversation happened to turn on the nature of the plundering descents his ancestors made on the coast in the 10th and 11th centuries. The Dane astonished me with the knowledge he displayed of a subject of such antiquity, naming names and counting dates with a facility that showed his source of information was by no means of a limited character. Seeing that I took an interest in the subject, he said: "When we reach Hambergh, I will show the title-deeds, which I hold as head of my family, of a tract of land once held and occupied by my ancestors in the south of Ireland." He was as good as his word. On our arrival, he took me to his house—for he resided in the city—and from an old iron safe he drew forth a discolored parchment, or what represented parchment, for it had a much more leathery appearance than parchment. Full and comparatively legible as were the characters on it, it was a sealed document to me, for it was written in the old Norse language, at least so said my informant. It purported to be a title or grant of land for a vickingar named Reginald, acting for his sovereign lord *Iverus*, or *Irus*, if my memory serves; indeed, at this date, I cannot say with certainty that I do not transpose the names. It bore the date 1006. What interested me, however, was a document that accompanied it and was attached to it, which was much less of a mystery. This

"The notices given by the old Iceland voyage chroniclers respecting the climate, the soil and the productions of this new country are very characteristic. Nay, we have even seen a statement of this kind, as old as the eleventh century, from a writer not a Northman, Adam of Bremen. He states, on the authority of Svein Estridson, the King of Denmark, a nephew of Canute the Great, that the country got its name from the vine growing wild. It is a remarkable coincidence in this respect, that its English re-discoverers, for the same reason, named the large island which is close off the coast, *Martha's Vineyard*. Spontaneously-growing wheat (maize, or Indian corn) was also found in this country.

"In the mean time, it is the total result of nautical, geographical and astronomical evidences in the original documents, which places the situation of the countries discovered beyond all doubt. The number of days' sail between the several newly-found lands, the striking description of the coast, especially the white sandbanks of Nova Scotia, and the long beaches and downs of a peculiar appearance on Cape Cod, (the Kilarnes and Turdustrandir of the Northmen,) are not to be mistaken. In addition hereto we have the astronomical remark that the shortest day in Vineland was nine hours long, which fixes the latitude at $41^{\circ} 24' 10''$ or just that of the promontories which limit the entrance into Mount Hope Bay, where Leif's booths were built, and in the district around which the old Northmen had their head establishment, which was named by them Hop."

In Vineland the sun rose on the shortest day at the beginning of *Dagenal* and set about the close of *Eykt*. As the ancient Northmen divided the horizon into eight grand compartments called *altir*, so they also made a corresponding octuple division

was a map representing the barony on the sea coast, on which this land was situated. On comparing it with a modern map, I found it wonderfully correct. Creeks, coves and bays were marked upon it with an accuracy that surprised me. The names of most of the places, not many in number, were in the Irish language, some few in Norse and Irish. The boundaries of the grant, which were marked with lines heavier than the ordinary lines of the map, denoted a tract of land on the sea coast of considerable extent. But the most remarkable feature about it, one, in fact, that, at the time, caused me to doubt the genuineness of the whole, was, that it represented this barony as an island, which it is not. The Dane said, however, and said truly, that in this lay no cause for doubt; for geological changes as great are not impossible, nor even uncommon, during a space of 800 years.

Many years afterward I happened to make the acquaintance of an English engineer in New Orleans, who assisted in the survey of a route for a short railroad in this very barony. On my mentioning the particulars of the incident above related, he said that there was no doubt whatever of its having once been an island; that the route which he assisted in surveying lay in a valley which was once undoubtedly the bed of a river or arm of the sea that gave it its insular character. If any of my readers are curious to know on what part of the "green isle" this old Danish lodgment was made, they will find it on the map of the south east coast of Ireland, forming the western boundary of that estuary which divides the province of Munster from that of Lunster.

of the solar day into aliquot parts called *eyktir*, each of which was consequently equal to three hours. Here follows a curious diagram representing the divisions of the day according to the sections of the horizon.

"The adjustment of the relative portions of the *áltir* and *eyktir* as exhibited in the above diagram, is based on ancient writings, and particularly on the ancient ecclesiastical law of Iceland, promulgated in 1123 by *Thorlak*, bishop of Skalholf, and *Kettel*, bishop of Holum, of whom the former as we have already remarked was nephew of *Snorre*. This ecclesiastical law assigns the extent of that portion of the horizon which is called *Nororatt*, and to which the *Eykt Minatti* corresponds, thereby fixing the other sections of the horizon, by which the divisions of the day were regulated."

"The Northmen were also acquainted with American lands still farther to the south called by them *Huitramannaland*, (the land of the white man) or *Irland í mikla*. This land was probably North or South Carolina, Georgia, or Florida."

The last memorandum supplied by the old Icelandic records is a voyage from Greenland to Markland (Nova Scotia) as late as 1347. Humboldt, in his *Cosmos* says: "The Skarlinger (*Esquimaux*) who then occupied a much more southern position on the continent, related to the Northmen in Vineland that further south, beyond the Chesapeake Bay, there dwelt white men, who clothed themselves in white garments, carried before them poles to which clothes were attached, and called with a loud voice." The Northmen interpreted this account as indicating that the "white men" were marching in procession singing, and carried banners before them.

"Among the Shawanese Indians," says *Rafn*, "who, some years ago emigrated from Florida to Ohio, there is preserved a tradition which seems important here, viz: that Florida was once inhabited by white men who were in possession of implements of iron." This continues *Rafn*, "must have been an ancient Irish people who previous to the year 1000 were settled in this region. The powerful chief *Are Marson* of *Reykianes* in Iceland, was in the year 983 driven thither by storms and was there baptized. The first author of this account was his cotemporary, *Rafn*, surnamed the Limerick-trader, he having resided in Limerick in Ireland." Another authority on the subject *Laing*, a Scotchman of Danish descent, says: "The discovery of Vineland in the eleventh century, is not less established by documentary testimony than the discovery and colonization of Greenland. Yet it cannot be substantiated by anything to be found in America,* for its discov-

* Mr. Laing thinks the Scandinavians made no settlement in America. That they did make settlements, and those, too, far from the coast, confirmatory evidence is gradually coming to light. Even as we pen these lines the *Washington Union* newspaper, brings us an account of the discovery near the Great Falls of the Potomac by a Danish antiquary—*Thomas C. Rafnson*—of the remains of an

erers were but adventurers trading for skins, timber, etc., but making no settlement. Nevertheless by a manuscript of unquestionable authority, of a date between 1387 and 1395, it is known that Vineland had been discovered eighty years before Columbus visited Iceland to obtain nautical information, when of course he got or saw the written report about Vineland."

All the Scandinavian *Sagas*, or records, in reference to the first settlement of Iceland agree as to the discovery of land beyond the Atlantic. And the abstracts of the "*Eyrbyggja Saga*" of Sir Walter Scott, confirm in some particulars the above extracts.

The question will naturally be asked, why the land discovered to the south should be called by the Northmen *Huitramannaland* or *Irland it mikla* (Great Ireland) if white men, and those white men Irishmen, were not settled thereon?

Scott says the Northmen found the Irish in Iceland before them; it is therefore not at all surprising if they preceded them in America. At all events the Northmen would certainly not be likely to give the credit of these discoveries to strangers, and thus give America her first baptism—Great Ireland—if the facts did not warrant it.

In Rivero and Tschudi's *Peruvian Antiquities*, the opinion is confidently expressed that Irish colonies were planted in the Carolinas and Florida as early as the ninth century, and makes mention of a nation that according to the traditions of the Esquimaux, dwelt in their neighborhood, wore white vestments, uttered cries, and made use of long poles with pieces of cloth attached to them, which probably indicated a chaunting procession of monks carrying banners. The authors conjecture that this neighborhood was *Huitramannaland*, the country of the white man, which lay along Chesapeake Bay extending down into Carolina and even still farther south.*

The translator of Rivero, Doctor Hawks, observes that there is

Icelandic woman named Suasu, who died in the year 1051. "Coins, bronzes, trinkets, fragments of teeth, and other curious things have been exhumed from the grave."

* It is a curious fact that the aboriginal races of Mexico and South America wore the cross as an emblem long before they could possibly have known its Christian significance; unless, indeed, they took it from those early European visitors, which is not probable, or there would have remained some traditional evidence of the fact. They knew not what the sign portended. They only knew that the custom was handed down to them by their ancestors.

Lorenzard in his history of New Spain, Mexico, 1770 mentions the cross as having been worn by the natives. "In the Mexican Tribute tables (*Talegaf*), small pouches or bags frequently occur. Appendages to dress, they are tastefully formed and ornamented with fringe and tassels. A cross of the Maltese or more ordinary form is conspicuously woven or painted on each."

Again we find, in the History of the *Abipones* of Paraguay, by Martin Dobrizhoffer, eighteen years as missionary in South America, that the natives "tattoo themselves by pricking the skin with a thorn. They all wear the form of a cross on the foreheads and two small lines at the corner of each eye."

"I saw also crosses marked on the foreheads of all the Abipones, but likewise black crosses woven in the red woollen garments of many."

no other testimony than what is found in the text. In this, however, he is not quite correct. '*Monastichon Britannicæ; or, a Historical Narration of the first founding and flourishing state of the Ancient Monasteries, Religious rules and orders of Great Brittain, in the times of the Brittaines and the Primitive church of the Saxons,* collected out of the most authentic authors, Leiger Books and manuscripts. By the learned Antiquary, Richard Broughton, London, 1655." In this work, which was published some twenty years after the author's death, reference is made to America, anterior to its discovery by Columbus. 'Tis true, he introduces the voyage of St. Brendan, which is legendary in its character; nevertheless, we think such evidence should not be entirely disregarded. Indeed if we adopt the suggestion of Humboldt, we should be very cautious how we reject them. "I do not participate," says that illustrious scholar, in his *Cosmos*, "in the rejecting spirit which has but too often thrown popular traditions into obscurity; but I am, on the contrary, firmly persuaded that by great diligence and perseverance many of the historical problems which relate to the early times will one day be cleared up."

To reject all, when part of the testimony is unreliable, may be sound doctrine in law; but it is not so sound, and can have no application where the truthful grains of history are being sifted out from the foggy mists that surround the dim and shadowy past. We do not see why an "ancient mariner"—or for that matter an ancient saint—could not tell his story, impregnated though it be with a due amount of the marvelous, as the stories of modern travellers are to day, and will be while time lasts—without having their whole narrative rejected and even the fact of their own existence questioned.

Nevertheless, legendary or traditionary evidence—such is our nature—will always be rejected by those to whose prejudices it runs counter; when it does not, or when on the contrary, it chimes with our predilections, we accept it with more credulity. Modern philosophy, too, has created an almost universal spirit of skepticism. But, as we grow older and more profound, we may also—like Germany's greatest scholar—become more credulous. Broughton says—alluding to the early missionary monks of the order of St. Martin of Tours, the uncle of St. Patrick: "These he sent into many remote places and nations. . . . We find in the old written life of St. Brendan, that many of them were sent out, and lived in the *Isles of America*, and had been there, some eighty years, some ninety; brought up by St. Patrick in his monasteries in these parts before. Mennius proveth that St. Patrick preached forty years to divers extern nations, which could not be only to the Irish in Ireland who were but one nation extern to Britain." (Pages 131-2.)*

"Of St. Kentigern, who lived on the plainest fare, wore coarse

* The marginal authorities are MANUSCRIPT. *Antiq. Capgrave in S. Brendan. Mennius' Histor.*—supra NATH. WESTON. ANNO 491. *Antiq. Glastonien Capgrave in S. Piran.*

garments, and carried his own pastoral staff, not round or gilded, or set with pearles, but of plaine wood only bended backwards; our antiquarians, even protestants, with others, assure us he had in his colledg at Elgu, besides others, always 365 learned apostolick men, and sent them into the Orchades Islands, to Norway, Island (Iceland), and other extern nations. . . . Also to Greenland, accounted part of America, . . . and many other lands and islands of the East ocean to Russia . . . and many other islands beyond Scautia (Scotland,) even until the Pole Arctick." (Page s 187-8.)

Broughton also mentions Machutus, "who was bishop both in Great and Little Brittain, (Brittany) . . . and both in Brittain and America." (Pages 334-5.) From this it may be inferred that there was a somewhat active European navigation carried on in the North Seas as far back as the fourth and fifth centuries.

Though the disciples of St. Patrick are numerous enough, in all conscience, in America to-day, to render it unlikely that any one will ask who he was, yet, as the same thing cannot be said of St. Brendan, we will give a brief account of the ancient apostle of Christianity, taken from Otway's Sketches of Erris and Tyrawley, Dublin, 1845.

"Brendan was bishop or abbot of Ardfert and Cloufert, in the county of Kerry, in Ireland. He was born in A.D. 484 and died in 578, living 94 years. We are informed that Brendan, hearing of the previous voyage of his cousin Barinthus in the Western Ocean, and obtaining an account from him of the happy isles he had landed on in the far West, determined under the strong desire of winning heathen souls to Christ, to undertake a voyage of discovery himself. And aware that all along the western coast of Ireland, there were many traditions respecting the existence of a western land, he proceeded to the islands of Arran, and there remained some time, holding communication with the venerable St. Enda, and obtained from him much information on what his mind was bent. There can be little doubt that he proceeded northward along the coast of Mayo, and made inquiries among the bays and islands of the remnants of the *Tuatha Danaan* people, that once were so expert in naval affairs, and who acquired from the Milesians or Scots that overcame them, the character of being magicians from their superior knowledge. . . . Having acquired all the information he could, Brendan returned to his native Kerry; and from a bay sheltered by the lofty mountains now known by his name, he set sail for the Atlantic land; and directing his course towards the southwest, in order to meet the summer solstice, or what we should call the tropic, after a long and rough voyage, his little bark being well provisioned, he came to summer seas, where he was carried along, without the aid of sail or oar, for many a long day. This, it is to be presumed, was the great Gulf stream, and which brought his vessel to shore somewhere about the Virginia capes, or where the American coast tends eastward and forms the New England States. Here landing, he and his companions marched steadily into the interior for fifteen days, and then came to

a large river ; this was evidently the Ohio. And this, the holy adventurer was about to cross, when he was accosted by a person of noble presence—but whether a real or visionary man, does not appear—who told him he had gone far enough ; but further discoveries were reserved for others who would in due time come and Christianize all that pleasant land.

“The above,” continues Otway, “when tested by common sense, clearly shows that Brendan landed on a continent, and went a good way into the interior, and met a great river running in a different direction from those he heretofore crossed ; and here, from the difficulty of transit or want of provisions, or deterred by increasing difficulties, he turned back ; and no doubt, in a dream, he saw some such vision which embodied his previous thoughts, and satisfied him that it was expedient for him to return home.”*

Here is food for conjecture. Here is a subject for the mind to dwell upon ; to travel back ages upon ages and speculate on the fate of those early wanderers. What became of them ? Did they perish and leave no traces—no monument of their presence ? Or were they absorbed in the aboriginal race, leaving no visible mark of the fact on the features of the absorbent. The Sagas referred to by Humboldt, claim three precursors to Columbus of their own race, namely, Ari Marrson, in 983 ; Biorn, still later ; and Gudleif about the middle of the eleventh century.

Again it will be perceived that the last records of an expedition to America, according to Rafn, by the Northmen, bring us down to the year 1347, a period when the grandfather of Columbus might have been living ; and when it is considered that Columbus himself visited Iceland in 1477, when, if he did not obtain authentic papers or charts, must have picked up some information on

* Washington Irving, in his History of Columbus, alludes to a voyage made by St. Brendan and his disciple, St. Malo, in the Sixth Century, in which they wandered about the ocean, and at length landed on an island called Ima. In the seventeenth century, an island was seen by the inhabitants of Gomera and Ferro, of the Canary group, bearing northwest some forty leagues. It was seen by so many and so plainly was it visible, even at different periods, that an expedition was dispatched to find the unknown islands, but in vain. Many expeditions were started with the object of finding the strange island, but to no purpose.

At that early day, this was sufficient to give the undiscovered or imaginary island a supernatural character, and it was accordingly set down as the enchanted Island of St. Brendan.

The governor of the Island of Ferro, Alonzo de Espinosa, made a report, in which more than one hundred witnesses, some of the highest respectability, deposed that they beheld the unknown island some forty miles distant, in the northwest ; and it was actually set down in some of the European charts of the period.

The island, however, was an optical illusion, the result of atmospheric causes such as we have described in the first chapter of this work, and it was so considered by the learned even at that early period.

It is in connection with this enchanted island that he refers to St. Brendan, making no mention whatever of the voyage above alluded to—a very natural thing, however, in one writing the history of Columbus.

the subject from the descendants of those truly "ancient mariners," it seems to supply the wanting link in the chain of those most interesting events.

Any one who reads the life of Columbus must be struck with the pertinacity with which he persisted, through all his difficulties, in maintaining that "land lay to the west." Even when he had sailed across the unknown sea, and still no land was visible; when against the murmurs and threats of his crew, he still confidently pursued his course, the conclusion forces itself upon the mind that he must have been in the possession of some previous knowledge on the subject. Either that, or he was an inspired being.

And yet, however conclusive some of the preceding extracts may be, they cannot be said to affect the fame of one, who, after all, made America a fact, which before it could not be said to have been; for, though he may have obtained information on the subject, it must have been at best, at that remote period—when navigation was little better than speculation—so vague and undefined that it required a being of most extraordinary powers to establish on it a fact of such magnitude. I trust the reader will excuse these digressional extracts—the student of history, should they come under his notice, I know will. Dim the light and dull the mind of him who does not peruse them with, at least, some degree of interest.

Be the remote history of America what it may, the Mexican Indian, like his relatives of the North, does not appear to hold his own when he comes in contact with the white race. Their numbers are diminishing, slowly, it is true, but still diminishing.

No census has been taken in Mexico since 1831, at which period the population numbered 6,382,284. This estimate cannot be considered as reliable, several of the States being set down in round numbers. Subsequently, however, a general enumeration having been made, based upon the returns of the different local authorities, the population was found to be 8,287,413. Of this number one-sixth part consists of those who are of European extraction; three parts the pure aboriginal Indian race, and the two remaining parts of a mixed race of European, Indian, and African blood; the latter in a very limited degree, and is principally confined to the coast.

The greater portion of this diverse population resides in 26,408 cities, towns, villages, factories, and farms, all the most considerable of which are to be found on the elevated parts of the territory or on the slopes of the great mountain range of the Cordilleras. Thus it happens, that while throughout the whole of the Republic a deficiency of inhabitants is observed, in comparison with what such an immense territory is capable of supporting, yet this deficiency is more especially to be perceived in the lowlands extending along the coasts. The deficiency of population in these localities is so great that there are wild tracts of land never yet trodden by the foot of man.

The chief of the statistical bureau, Don Manuel Orozco, says "the conquered race has never increased: from generation to generation its individuals, left in absolute liberty and protected by the laws, diminish visibly, without any ostensible cause to which this result can be attributed; and on every side we see the towns, inhabited exclusively by them, becoming depopulated and ruined without the possibility of prevention. When we find an increase it is in the part possessed by the conquering races—an increase which, according to the data given by every writer, is constant and at times too rapid. Thus it is, in my view, that the census supports my ideas, for it does not exhibit the constant increase of both races, but marks the proportion between the one that increases and the other that diminishes, and from this flows the phenomena that the aggregate of population seems to advance so slowly that it almost remains stationary."

From the time of Montezuma to the present day, the localities inhabited by the indigenous tribes, have changed very little. One curious fact, however, is worthy of notice, that many of the rudest tribes, in order to enter upon the road to civilization, have given up their rude idiom for the Spanish. The Popolocas, for example, in the State of Puebla, formerly extended to Tacamachulco, and now those speaking the ancient tongue are reduced to a small space, the others making a boast that they have abandoned their idiom for the civilized tongue.

In Yucatan, however, the conquerors have not been able to impose their language upon the tribe inhabiting that peninsula, and the whites have been compelled, in self-defence, to learn the Mayo for the purpose of commerce and intercourse. Here, in contradistinction to more northern States, the white race is giving way before the Indian. According to a well-known physiological law, this will ever be the case unless the white race is constantly invigorated by emigration: in the absence of this supply the greater number will not only absorb the lesser, but, in course of time, not one characteristic feature of the lesser number will be visible. It may reasonably be doubted whether any race of men is cosmopolitan in anything like an absolute sense; in other words, whether its power of acclimatization is unlimited within the range of the habitable globe. What would become of the Esquimaux, translated to the torrid zone; or the Hindoo or West Indian, to the inclemency of the Arctic Circle? Even the European going to the tropics, becomes subject to dysentery, and the Negro going to Europe to pulmonary complaints; and it is probable that every race has certain prescribed geographical limits, from which it cannot, with impunity, be displaced.

Of all races, the Jews, the Gipsies, and the Chinese appear to approach nearest to a cosmopolitan character. Statistics which have been published respecting the Jews in different countries seem to show that the Jew is subject to different physiological laws to those of the people by whom he is surrounded. Colonial

statistics prove that he is more readily and completely acclimatized than other colonists, as seen by the records of diseases and deaths.

The chief cause of the apparent superiority of the Jew in this sense, according to Dr. Knox, is assumed to consist in the fact that they are a pure race. Indeed, all pure races support the influence of change better than mixed races, as the example of the Chinese, the Gipsies, and even the nomadic Arabs indicate. The Anglo-native of India is physically inferior to his progenitors in England; and were there no other inhabitants there, it is doubtful whether it would ever be peopled by him; if it would, it would be by an inferior race. The Asiatics of North America—that is the aboriginal native—though a pure race were never able to hold their own—never fought “the battle of life” successfully. However, the superior race with which they came in contact explains this. In South America and Mexico the Spaniard, though a pure race, if we except a cross of the Goth, physically degenerates, even without mixing his blood with the native.

If pure races stand so poor a chance what is to be the destiny of ourselves, crossed and recrossed as we are by every Caucasian tribe from Europe, and soon, perhaps, to have the black blood of four millions of Negroes poured into our hitherto blue veins?

In this connection two very important statements have been made on respectable authority, which, if true, involves a question of serious import to the future of America.

Dr. Knox asserts that the Anglo-Saxon race has a tendency to die out on this continent. While Professor Agassiz recently demonstrated in one of a series of lectures delivered in New York, that the physical structure of animals in America is inferior as compared to animals of the same species in the Old World.

To confute the demonstrations of a man as justly celebrated as Agassiz requires a knowledge of the subject equal, if not superior to his. To others, therefore, we leave the task of dealing with him. Dr. Knox's hypothesis is confuted, apparently so at least, by the great and steady increase of the population. 'Tis true, he may account for this by immigration and the constant flow of fresh blood infused. His theory, nevertheless, cannot be otherwise than speculative, while facts are evidently so strongly against him. And not until European emigration ceases, and America is left entirely to herself, can this important problem be satisfactorily solved. Indeed, one has but to read the preface to “Palfrey's History of New England,” to find abundant evidence of the vitality and fecundity of the race.*

* Out of this subject arises another interesting prognostic which we do not recollect to have before seen mentioned, at least in the form we present it. What destiny awaits that European colony transplanted to the only important space, if we except the two projecting portions of Africa and

This is a subject to which no American can be indifferent, no matter whether he be native or foreign, for the citizen of foreign birth cannot be indifferent to the future of his offspring. No one but an enemy to the equitable and just distribution of that material wealth which labor alone produces, and which is here to be found in a greater degree than in any other part of the world, but would regret to see any other but a bright destiny awaiting America, where the poor industrious man has truly a fair field and is rewarded for his labor to a degree hitherto unknown in any country of which we have any record.*

Whether progress or civilization, according to the general acceptance, will ever make themselves felt on the inferior materials which comprise the present population of Mexico, is extremely doubtful. Indeed there seems less hope for her while under the control of those Hybrids—part Indian, Spanish and Negro—who have governed, or rather misgoverned the country since the establishment of the Republic, than if she were entirely under the control of the semi-civilized but pure Indian race.

To be Continued.

ART. VI.—JOHN B. FLOYD AND ARMS FOR THE SOUTH.

(Extract from an unpublished History of the War of Secession.)

UNDER the theory of the Constitution of the United States, the militia of the several States was the chief defence of the country. In forming a union among themselves, each State waived its right to

America, above the wide waste of waters of the Southern hemisphere, known as Australia? Was it one of those pre-arranged designs in the economy of the universe that these people should migrate to this spot within the temperate zone of the antipodes, so that the superior Caucasian race should perpetuate itself and flourish, when London would be, not as Macaulay has said, a ruin, but sunk fathoms deep in an ocean that will cover half a world, as it now covers the southern half? When that change takes place in the axis on which our world spins, which science, it is said, is proving to be slowly but surely accomplishing; when the order shall be reversed, and the waters now covering the southern hemisphere shall cover the northern, blotting out its continents, empires, and kingdoms, even its very history, leaving bare in the southern new continents, empires, and kingdoms, and opening out a new and distinct page in the history of created things; then Macaulay's New Zealander, not a civilized savage, but one of his own (Celtic) race, if he would pay a visit to London would have to seek for it with a "deep sea lead line."

An evidence of the slow but steady change going on in the bearing of the poles is said to be found in the ruins of ancient Christian churches which were build facing east and west. It is found that they now differ from these points more or less according to their antiquity.

* Four years of civil strife, carrying in its train those evils that ever go with it is now changing all this—we trust not permanently—Death, Taxation, Peculation, and Speculation—the effects of which are now beginning to be felt for the first time in the history of the Republic. That equitable distribution of wealth, which, above all others, is the true test of a prosperous people, is now beginning to be less apparent; in other words, the rich are becoming richer and the poor poorer.

keep (regular) troops and ships of war *in time of peace*; although that right doubtless revived in time of war. It reserved the right to officer and train its militia, and to keep on hand material for its own defence. But the States, with one or two exceptions, had for many years neglected to keep up any efficient arsenals of their own, relying on those of the common government in all emergencies. The Federal Government had in store large amounts of arms and ordnance, either procured by contract, or made at its own establishments; all of which, except one at Harper's Ferry, in Virginia, were in the Northern States. These arms were distributed among many arsenals or depots, some of which were in the Southern States. An Act or resolution of Congress authorized the occasional issue of some of these arms to the States for the purpose of arming the militia. But a small amount of arms of any kind had been issued under this provision.

In 1860, several of the Southern States finding that the whole power of the Federal Government was about to pass into the hands of the Black Republican party, located altogether in the Northern States, and that any attempt to resist effectually the unconstitutional and revolutionary measures of that party, would turn against them the whole military material accumulated by the Government, and paid for chiefly by the South, on which, under the protective tariff, the chief burden of taxation was thrown, they became anxious, too late, to provide the means of defending themselves. The Legislature of Virginia, somewhat late in the year, appropriated funds, and appointed commissioners to provide for the defence of the State; the Legislature of Alabama charged the Governor with this duty; and some other States took similar measures. But all these attempts at arming were failures, from the shortness of the time, the scantiness of the appropriations, the want of judgment and promptness in the agents employed, or the narrow powers given them. Little ordnance was procured, not many small arms, and most of these of inferior quality and antiquated patterns.

On the 24th of December, just four days after the secession of South Carolina, the U. S. Ordnance officer at the Pittsburg foundry, in Pennsylvania, in the routine of his duty, was about to ship seventy-eight heavy guns southward. These guns had been cast for two new forts almost completed, one on Ship Island on the coast of Mississippi State, and the other on Galveston Island in Texas. But the Pittsburg mob took the alarm, for Mississippi and Texas were supposed to be on the verge of secession. A town meeting was called, which resolved forcibly to prevent the removal of the guns, and sent dispatches to Washington to protest against it. When, six days after this, South Carolina seized upon the U. S. arsenal in Charleston, the people throughout the North were exasperated on finding that so many arms had been placed within reach of the "Rebels," and turned their wrath on the Secretary of War.

This post was then filled by John B. Floyd, a Virginian, of a family long well known in that State. He had been Governor of Vir-

ginia, as his father, John Floyd, had been before him. Both had been strenuous asserters of the rights and the equality of the South in the Union; and the younger Floyd had been educated at the College of South Carolina. This alone was enough to damn him in popular estimation at the North. It was asserted, and readily believed, that he had availed himself of the position at the head of the War Department, to transfer large amounts of arms and material of war from the North to the South, in anticipation of secession; thus arming the "Rebels" while he disarmed the true men and *their* government; for the people of the Northern States, almost universally, looked upon the Federal Government, with its powers and national means, as something belonging to themselves. Indeed, encroachments and usurpations had now made this practically the truth.

On examining the records of the Ordnance Department, which was promptly done by order of Congress, it was found that an order had been received from the War Department, in December, 1859, for the transfer of one hundred and fifteen thousand stand of arms to Southern arsenals; that, in obedience to these instructions, orders were issued from the Ordnance Bureau on the 30th of May, and one hundred and five thousand muskets, and ten thousand rifles had been sent from the Springfield armory in Massachusetts, and from two arsenals at the North, to the arsenals in North Carolina, South Carolina, Georgia, Alabama, and Louisiana. But when the nature of this transaction was thoroughly investigated, the truth proved to be this: There had been great neglect for years in replenishing the Southern arsenals. But the United States, now following the example of European Governments, had of late been laying aside smooth bore musket and old-fashioned rifle, and substituting the Minie rifle in their place. It appears, from the report made by Col. Craig of the Ordnance Bureau, for the information of the House of Representatives, that the caliber of the muskets sent to the South was sixty-nine hundredths of an inch; that forty thousand of them were old flint lock muskets altered to percussion; and that the caliber of the rifle was fifty-four hundredths of an inch. Every ordnance officer knows that these are the descriptions of the old-fashioned smooth bore musket and the army rifle manufactured previously to the discovery of the Minie principle in the construction of fire-arms. Thus, all of these arms sent to the South, were of antiquated patterns, laid aside by the U. S. army and the Northern volunteer corps, and sent away as comparative lumber, to make room in the Northern armies; yet they were thought good enough to furnish the Southern arsenals. In the issue it proved that one of the odds against the Southern troops in the beginning, and indeed throughout the war, was having to contend against an enemy armed with superior weapons. We have no exact information as to the contents of the other arsenals in the Southern States; but after seventeen thousand muskets and rifles had been received at the Charleston arsenal under Secretary Floyd's order, we know that when it was taken possession of a few months later by Governor Pickens, little more than nineteen thousand stand of arms

were found there, showing that the War Department had previously left this large Southern arsenal almost bare of arms. Having had peculiar opportunities of ascertaining the contents of the arsenal, we assert that not one single Minie rifle or musket was found there.

Notwithstanding these small arms sent to the South, and the immense number of old fashioned and disused naval guns accumulated at the Gosport navy yard near Norfolk, when it fell into the hands of the Secessionists, a great preponderance of efficient arms, in proportion to the population, remained at the North. Yet President Lincoln, in his message to Congress on the 5th of July, 1861, did not scruple to assert that "a disproportionate amount of arms and munitions of war had somehow found themselves in the Southern States."

The ease with which the Southern forts fell into the hands of the Secessionists was another ground for charging Secretary Floyd with treachery. The truth was, that while the Northern forts were always kept in the highest order, furnished with the most modern and approved armaments, and seldom without a garrison, though often a scanty one; a more economical system was applied to the South. The forts along the Southern coast had long been neglected. With the exception of a few, of great importance to Northern commerce, or to naval stations—as those at Key West, the Tortugas and Pensacola—the armaments were antiquated, the works neglected, and many had not seen a garrison for years. It is, by the bye, a noteworthy fact that most of the costly works built by the Federal Government within the last thirty years along the Southern coast, were quite as well adapted to bridling the South, as to defending it against a foreign foe. Fort Sumter is a striking instance of this policy, and its effect was so well foreseen, that a patriotic citizen of South Carolina, an old and gallant soldier, strove in vain to prevent its foundations being laid, by taking out a grant for the sand bank which afterwards became its site, and resisting at law its application to that use. Nor was he alone in his gloomy forebodings as to the object of this bit in the mouth of Charleston harbor. The neglected condition of the older and more numerous forts in the South, and the paucity of troops in the seceding States, were bitterly urged as proofs of official treachery. Secretary Floyd was assailed and denounced on the floor of Congress, in the columns of the daily press, and in the clamors of the populace. Beset by rabid enemies, he had yet more cause to exclaim: "Save me from my friends!" when an ignorant Georgian editor most inopportunistically lauds his patriotic foresight, through which, at this critical day "so few troops and so many arms are found in the South!"

But it is notorious that for many years the greater part of the small force forming the U. S. Army had been kept west of the Mississippi, in the neighborhood of the Indian tribes. At this time the most considerable force cantoned in one State was in Texas, which seceded a few months after. But in this case the Black Republican journals soon found out that this force had been sent

there to be betrayed, in indefensible positions, into the hands of the "rebels."

If New England had seceded, as she at times threatened, it would have been curious and instructive to hear what would have been *there* said of a Secretary of War from New England, who had adroitly taken the preparatory measures attributed to Secretary Floyd. But there is no proof that any Southern man foresaw or anticipated secession a year or even six months before it occurred, and General Floyd, although he was an able man, had not this prophetic sagacity. Moreover, if he had foreseen the secession of the Southern States, and had issued his order of December, 1859, with a view to furnish arms to the Secessionists, he would not have allowed it to remain unacted on until May 1860, and would have taken care to send to the South, not the worst, but the best arms the government possessed.

On the 29th of December, 1860, when President Buchanan, after a prolonged and warm debate in his Cabinet, abandoned the conciliatory and non-coercive policy to which Secretary Floyd deemed the President and himself pledged, until after at least an attempt at negotiation, he resigned his post, the President and himself parting with much regret, and with kindly feelings towards each other. After a short visit to Virginia, finding his official career publicly and clamorously assailed, he returned to Washington, boldly denounced the *ex parte* proceedings against him in Congress, and challenged proof of the various charges against him. An attempt was made to convict him of corruption in his own department, and also to implicate him in a great fraud perpetrated in another department of the government, with which he had no connection. But the Attorney for the Government was obliged, before trial, to abandon both cases as groundless. Nothing, however, could silence the clamor against him. On the secession of Virginia he took arms for her defence; and in the estimation of his detractors, his career as an enterprising and gallant leader not unadorned with success, and his devotion until death to the cause of the South, only crowned with open and unrelenting rebellion the hidden treason of his ministerial career. The writer of this judges him differently. In early youth he knew Floyd well. He had afterwards no opportunity of observing how far he yielded to, or resisted the influences of the corrupting school of political life. But after losing sight of him for nearly thirty years, he recognizes in the patriot, soldier, and leader, the same noble and commanding spirit in early manhood so well known to him.

When it became no longer possible to shut the eyes to the storm of ruin that threatened the South, not only individuals, but the States became alarmed at their defenceless condition. From the character of the country and the habits of the people, sporting firearms were numerous there; but of military small arms, and yet more of ordnance and other munitions of war, there was great dearth. Many attempts, some not unsuccessful, were made to procure arms from Northern manufacturers, most of whom were quite willing to furnish

whatever was paid for. But very soon the press, the populace, and the State governments raised an outcry against furnishing arms to traitors. The police everywhere, but especially in the city of New York, were on the watch to ferret out every weapon that might reach the hand of a Southern man. These arbitrary searches and seizures were continually made on board ships, on railroad trains, and in warehouses, although there was not a shadow of law to authorize them. The authorities of the State of Ohio armed two steamers, and employed them in searching vessels and seizing arms on the Ohio river, sometimes within the jurisdiction of Kentucky. These doings were loudly protested against even at the North. The *New York Herald*, among others, denounced it as "a clearly illegal proceeding, in violation of the Constitution of the United States, and without the sanction of any law of the State. It is an unwarrantable outrage on the rights of private property, and is one of that class of acts which have already driven five Southern States into secession, and will soon drive five more, if not the whole fifteen."

Fernando Wood, Mayor of New York, in reply to the inquiries of Mr. Toombs, Senator from Georgia, says: "I regret to say that arms intended for and consigned to the State of Georgia have been seized by the police; but the city of New York should in no way be made responsible for the outrage. As mayor I have no authority over the police. If I had the power, I should summarily punish the authors of this illegal and unjustifiable seizure of private property." It seems that the Black Republican party, being dominant in the State of New York, had by legislation deprived the city of New York of all control over its own police, the Democratic party being in the ascendant there. Governor Brown of Georgia, however, immediately laid his confiscating hand on five New York ships, lying in the port of Savannah, which summary process caused the prompt surrender of these particular arms.

Partly from natural causes, yet more from the policy long pursued by the Federal Government, the great public establishments for the manufacture of arms and material of war, and the private factories fostered by government patronage and the protection of high duties, had all, with two exceptions in Virginia, been placed out of reach of the people of the Southern States; who, in their urgent need, were deterred from looking to Europe for a supply, by the heavy duty on arms, the length of time required to procure them from thence, and the chance, or rather probability, of having their importations cut off by a blockade. Their trade had been so long trammelled and forced into a particular channel by the protective policy, that they now sought to supply their want of arms, as they had become accustomed to supply that of implements and mechanical productions, by purchase in the Northern cities. But they were not more anxious to arm themselves, than the people of the North were to keep them weaponless. Every attempt, either by individuals or States in the South, to procure arms was treated as a treasonable and rebellious act.

Setting all other grievances aside, how far did this keen anxiety to keep the Confederates unarmed and defenceless, the contempt of laws and compacts in the pursuit of this object, and the hostile and unscrupulous spirit betrayed thereby—how far did it justify and necessitate the secession of the Southern States? When the allies of the Athenians complained of the seizure of the confederate treasury at Delos and its transfer to Athens, the only answer they got was, that on Athens devolved the duty of defending and governing the confederacy, on her confederates those of submission and tribute. Sentiments similar to these now ruled the Northern mind. Indeed, many there for years past, would gladly have seen the South reduced to the condition of the land of Israel under the iron rule of the Philistines, when “there was no smith in all the land of Israel, for the Philistines said—lest the Hebrews make them swords and spears.”

ART VII.—HUMAN PROGRESS, ANCIENT AND MODERN.

THAT society, at least throughout Christendom, is progressing more rapidly than at any past historical period, seems sufficiently evident from the single fact, that population is increasing faster than at any former time. By Human Progress we mean, man's material well being. Men are animals, and like all other animals, increase in number rapidly when their natural wants are abundantly supplied.

Our purpose is to detect and expose the character and causes of Human Progress, ancient and modern. The traveller in Egypt is ever ready to exclaim, “These mighty monuments of skill and industry that surround me on every hand, were not the works of voluntary labor; those who erected them could make no use of them. They were built by slaves.” This opinion, so generally acquiesced in by the learned, is, however, far from being true, in whole. Human labor for thousands of years, was better regulated by the government in Egypt, than it ever has been in any other country, ancient or modern; and hence, her progress continued uninterrupted for a longer lapse of time, her population the most dense, (because best provided for); her industry the most untiring and efficient; her civilization the oldest, most diffused, and longest lived; and her works of art and industry the grandest, most magnificent, and most numerous. Government compelled all to work, but in return it took care of all. Labor was not voluntary, yet the laborers were not slaves. No man was ever willingly a common laborer, yet four-fifths of civilized mankind have ever been and must ever be common laborers. Their wants compel them to work for the wealthy and skillful, who make large profits and amass immense fortunes from their labor, leaving them, the laborers, barely enough to subsist on; yet they are not the slaves

of their employers. There was little political liberty in any of the civilized States of antiquity. The labor of the people was heavily taxed by government to erect works of art and utility—which, when erected, however, belonged to the whole people. There were very few wealthy individuals in those times. Governments were rich, individuals poor. Now, the rule is reversed. All governments are bankrupt, or would be so if compelled to settle their debts; and private wealth has become more than princely.

Hence it comes to pass that human progress is propelled in modern times not by governments, but by private capital and skill.

The masses come into the world without a place in it, or other means of living except by laboring for the capitalists. They are indebted without having run in debt. The capitalists who own the world, are their creditors, not their masters. They say to them in effect, "Work for us as well as for yourselves, or starve." Debt, private debt, is in modern times, the one sole great engine that propels the car of human progress. It is debt, entailed on him by birth, that speeds the ploughman's team; that drives the sailor to sea; that immures the miner in the bowels of the earth; that impels the soldier to the deadly breach; that trims the student midnight lamp; that stimulates and drives on human labor, and begets all improvement, all skill, all invention. Were all property in common, and of consequence, no one in debt, no one obliged by his necessities to labor for others, human progress and improvement would cease, civilization decay, and men relapse into the savage state. Debt, so much dreaded and so much abused, when not excessive, when not so heavy as to beget despair, is the greatest of human blessings. We shall not find one man in a hundred who has succeeded in life, who is not indebted to his early wants and poverty for his success.

He has succeeded because he was born or came to active life as a debtor. Whilst making a fortune for himself, he has helped to make fortunes for his employers, for all employers in some way tax the labor which they employ. This is no subject of regret to him, for having amassed capital, he in turn can leave off laboring, and live and increase his means by using his capital to tax labor.

The taxing or exploiting of labor by capital, can never become a general or serious evil in a country like ours, where an almost illimitable extent of fertile unsettled land invites immigration, and enables laborers at all times to escape from any unreasonable terms that capitalists would impose. But before we proceed farther, it will be best to illustrate and expound more fully the doctrine that capital commands, but does not pay labor anything; except in the few instances where in employing laborers, capitalists trench upon their capital and are not repaid by the results of the work of the laborers.

Capitalists build houses or ships or railroads, and pay their laborers say two dollars a day. If these improvements after erection

are worth what they cost, then they have paid their laborers nothing, for they retain their capital instead. They and their laborers have only exchanged equal values; for capital is but accumulated labor, human labor alone possessing value.

If the improvements be worth a third more than they cost, then will the laborers have paid for the privilege of being employed, one third of the results of their labor to their employers. All the profit made by employing labor, is so much tax levied or exploited from the laborer. Now it is precisely this profit which capital commands and exacts from labor, without paying any value therefor, that creates all wealth; that build up cities, and towns, and canals, and railroads, and steamships, and palatial private residences, and theatres and churches, and, in fine, all visible, tangible wealth—and thus speeds the car of human progress.

The heavier the tax that capital levies or exploits from labor, the larger will be the fund accumulated to be expended in works of art and utility, and in the many luxuries of life that beget refinement and high civilization. Hence the most progressive and prosperous countries are those where paupers most abound. The paupers being the laborers whom capital has taxed so heavily as to deprive them of the means of subsistence. If laborers were permitted to consume all that they produce, there would be nothing to accumulate, nothing to expend in the luxuries and refinements; famines would be frequent, human progress would cease, and human retrogression would begin. Indeed, very soon all men would relapse into the savage state; live in caves or cabins, and wear skins for clothing. Artificial and acquired wants would cease, so soon as each man had by his own labor to supply his own wants.

Society can neither be civilized nor secure against frequent famines, unless all property be owned by the few, and the masses be so destitute that the property holders or capitalists can compel them to labor as they please, not only for their own plain support, and for the luxurious support of the capitalists and the support of government, but also to create an enormous annual surplus fund to be expended in great and costly public and private works, and thus to speed the car of human progress.

The car of Human Progress is a Juggernaut car, that often crushes under its wheels the votaries that propel it. Pauper laborers, as a class, have thus been squeezed, and afterwards thrown aside like squeezed lemons; but the harder they are squeezed, and the more of them that are squeezed, the more wealthy, enlightened, civilized, progressive and distinguished does society become.

Seeing the apparent iniquity visited by capital upon labor, Bentham exclaims, "Prosperity is theft," and American socialists re-echo the charge. But it is an utterly false imputation, men only work in general from necessity, and work only to supply necessities. Thus laboring each man for himself, they would produce none of the comforts or luxuries of life, and be exposed

to frequent famines. The paupers in civilized society, have in the course of life enjoyed ten times as much of the comforts and luxuries of life as the best conditioned savages in the world, who are not guilty of the iniquity of holding private property. Indeed, the inmates of our prisons and poor houses, are in all respects better provided than savages.

According to our socialists, to acquire pecuniary independence, and live on the income of property, is to live by theft; because property does not breed, and in living on its income, we are using it as a mere instrument to exploit, tax, or rob with, just as burglars use false keys. But property does make ample compensation to the masses by compelling them to work, and the doctrine is as old as the time of Mennenius Agrippa; whilst the practice began with the dawn of civilization.

Nor, we repeat, do we see how skill and capital can tax or exploit labor too heavily in a country like ours, where lands are everywhere cheap and abundant, and can be obtained in the far West as a mere gratuity, and then, too, lands as fertile as any in the world. No doubt in those portions of Europe where population is dense, and consequently rents very high, capital does exercise a most cruel and exacting dominion over labor, ten times more cruel and exacting than that of any political government. For all governments do much to protect the poor, whilst capitalists only tax them. Yet, even in Europe, well organized and cheap modes of emigration are doing much to relieve the laboring classes from excessive exploitation by the property-holding classes. Throughout Christendom cheap modes of transportation are everywhere liberalising institutions, by affording means of relief to the laborer against the undue extortions of the employer. Many are too poor to emigrate, but the emigration of a part of the working men relieves those who remain at home by lowering rents and increasing wages.

Yet human progress, whether ancient or modern, when minutely dissected and analysed, is not an agreeable subject to contemplate. We cannot but deplore the necessity that civilized society has ever been and must ever be so organized, that the laboring classes must be fleeced or exploited of much of the proceeds of their labor, by the governing and wealthy classes that do not labor, and that those societies are most prosperous and progressive where capital taxes labor most exactly. The monuments of ancient art and industry in Egypt, Greece, Italy, and Western Asia, prove incontestably that unrequited labor propelled the car of human progress in olden times. Yet thousands of years elapsed during which those monuments were erected. England and America have expended more in great works of utility and luxury in the last fifty years, than the Ancients ever did in a thousand years. Private capital now taxes labor far more severely than did ancient despotisms.

And hence we live in the most progressive age of the world,

and among the most progressive people. No where else are there so many paupers and criminals, no where else so many millionaires, no where else so many and such stupendous creations of labor, art, and mechanic skill, erected within so short a period as in England and America. Man is a gambling animal, and life a lottery in these countries. Men who engage in trade, manufactures, commerce, or speculative employments of any kind, know from the experience of others that the chances of failure are ten times as great as the chance of success. Indeed, it requires just one thousand laborers to make and sustain one millionaire, if Mr. Greeley's calculation be correct in estimating immigrants as worth a thousand dollars a head. Men cannot justly complain when they buy tickets in the lottery of life that they draw blanks. Decaying and stationary societies are those where men are in least danger of pecuniary failure. Hence Italy and the South of France are the favorite resorts of those who would husband their means.

With all their defects and short comings, English and American institutions are the best in the world, and hence they are at the head of modern progress and civilization.

And nobly are they performing their task, by opening up all the waste places of the earth as a refuge and a home to the poor and oppressed of every nation.

But our progress has one ugly and alarming aspect. It is accompanied, and as long as it continues will be attended with a rapid and hitherto unexampled, increase of population. At the present ratio of increase four centuries hence the whole earth could not contain and sustain the American and English populations. How, when, and where is this increase to be checked? Shall we first conquer, and by free competition exterminate all savage races, then the other varieties of the white race, and finally make war upon and devour each other? We think not. Our progress and multiplication will be arrested, by what means it is impossible to foresee, and useless to inquire. Our societies will become stationary—long remain so, and then begin to decay. Let us not dread the coming of such times. Individual contentment will be promoted by national decay. We shall have fewer millions and no paupers. Men will become more cautious, provident and contented. Less anxious to acquire wealth, but more firmly resolved to preserve independence. It will be the great object of life to live happily and contentedly in such condition of life as we are born, rather than to struggle to change that condition. Americans are now the most discontented people in the world. We are all trying to make fortunes or to increase them, never stopping to enjoy them. Unconsciously, we are living for posterity rather than for ourselves. No people in the world know so well how to make money, and none know so little how to use and enjoy it. Our contentment and refinement of mind and morals will begin just where our progress and prosperity cease. When we have lost the art of money making, we shall learn the Art of Living.

ART. VIII.—LOUISIANA COMPARED WITH THE NORTHWEST.

MR. J. C. KATHMAN, Chief of the Bureau of Immigration of Louisiana, in an interesting pamphlet for the information of Immigrants as to the resources of that State, presents the collated evidence of its material advantages as a residence, enforced by some well-written remarks of his own, which find an appropriate place in this number. Says Mr. Kathman:

Heretofore there have been serious objections to Louisiana as a home for emigrants, as compared with the Northwest. Chiefest of these was the institution of slavery. In 1860, just previous to the war between North and South, there were in Louisiana about 331,726 slaves, held and owned by 20,670 masters. By far the greater number of these slaves were employed solely in agricultural pursuits, yet a very large proportion of them were taught and employed in the mechanic arts. Nearly all the building in the towns and cities, and with rare exceptions all the building upon the plantations, was done by slave mechanics, for the benefit of their masters. There were slave engineers, blacksmiths, sugar-makers, tanners, shoemakers, brickmasons, plasterers, and distillers. Few white mechanics could compete with the wealthy owners of these slave mechanics, and the consequence was that but few of the former class came to Louisiana and the other Southern States. Though there were more than twenty thousand slave-owners in the State, there were not twelve thousand land-owners, as the more numerous class of slave-owners were settled in towns, villages and cities, and held one or more slaves simply as domestic servants and mechanics. Out of 30,240,000 acres of land in Louisiana, these land-owners held 19,650,000, or two-thirds of all the land in the State, in tracts varying from ten acres to fifty thousand acres, and there was an enormous aggregation of slaves and lands in the hands of a few persons. The large slave-owners always sought out the richest and best lands in the State, and bought immense areas, which they seldom sold. The immigrant was forced into the poorer regions or altogether out of the State. The planters were compelled to restrict their agriculture to long crops of staple products, such as sugar or cotton, which alone could give continuous, unremitted and profitable employment to their slaves throughout the whole year, and other crops were neglected. With the abolition of slavery, all this has passed away, and now but few negro mechanics are to be seen, and they cannot compete with the better educated and more thrifty white mechanic. A consequence of slavery was the gradual absorption by the large slave-owners of all the best lands, and their refusal to sell was another objection to Louisiana. There is no longer any motive to hold large bodies of idle lands, for without labor they are worse than worthless; the tax upon such possessions is rapidly impoverishing their owners. The failure

of the cotton crop under freed labor is another powerful motive to sell. The policy of every one now is to hold no more land than he is able to cultivate, hence all the large bodies of land in the State are in the market, in lots and prices to suit purchasers. The richest and most fruitful lands in the world, and convenient to all the markets of the earth, may now be had at less than one-tenth of their value in 1860. Highly improved plantations of two thousand to four thousand acres, lying on the Mississippi, and within a half day's travel of New Orleans, may be had at less than ten dollars an acre, including buildings and valuable machinery.

A third objection which has heretofore been urged was the belief that Louisiana was not suited to the cereals and other provision crops. This arose from the fact that the whole labor of the State under the slave system had been turned toward the raising of sugar and cotton. The emigrant farmer, accustomed to raising grain and stocks of all kinds, was not attracted to a country which was unknown as a grain or provision-producing country, but, on the contrary, was known as a country which bought all its supplies abroad, and raised nothing but heavy crops with which the emigrant was totally unacquainted, and which he believed he would be unable to produce by his own labor. There were those, however, in Louisiana who had been accustomed for years to raise their own supplies, and who knew that all the small grain crops, as well as many other profitable crops, could be grown with more ease and certainty here than in the Western States, and that pork, beef, and mutton, of the finest quality, could be produced here at less than one-third of what it cost to produce it in the West. When, therefore, the Mississippi river was fully occupied by the Federal army during the war, and all chance to import supplies was cut off to those living in the interior of Louisiana, the people were compelled to give up the culture of cotton and sugar, and devote themselves to the production of food with which to support their families and keep up their armies. And then, to the astonishment of nearly every one, it was found that no soil on earth could surpass the rich lands of Louisiana in the production of grain and food crops of all kinds.

In the report of Judge J. B. Robertson, on the resources of Louisiana, made to the Legislature in 1867, and fully endorsed by that body for its accuracy, we find the following :

"Wheat has been raised in north Louisiana, in the pine hills, by hundreds of persons, for thirty years or more, and with a good yield for the character of the land and the system of culture, quite averaging the yield in the northwestern States. During the war, the scarcity of flour greatly stimulated the cultivation of wheat, and many of the rich cotton lands of the Red River valley were devoted to wheat, and the planters had just begun to understand and extend its culture. Though in many cases defective seed was used, yet I have seen sixty bushels raised to the acre."

* * "Wherever the United States cavalry encamped in Louisiana during the war, wheat, rye, oats and barley sprouted from the seed scattered where they fed their horses, and when undisturbed, headed finely and ripened well; the extraordinary size and weight of the wheat and barley heads showing that the soil was peculiarly adapted to their growth. A gentleman residing in the swamps of Assumption, assures me that he has raised wheat and rye there for twenty-two years, and that he has never had a failure; both grains frequently made forty bushels to the acre."

Other instances are cited in this report, to show that wheat has been raised in Louisiana time and again ever since the earliest settlement of the country, under all sorts of circumstances, and in every variety of soil, and with a success and certainty which show that we have only to direct our attention to grain-raising, to make Louisiana the greatest grain country in the world, and the Egypt of America. The mouths of the Nile and the mouths of the Mississippi are on the same parallel of latitude, and Cairo, in Egypt, and New Orleans are on the same line; and while the valley of the Nile is limited to a narrow strip of fertile land, hemmed in by the sands of the desert, the valley of the Mississippi, in lower Louisiana, is over a hundred miles in width, and is everywhere bordered by rich uplands and fertile prairies. All the plants and fruits of Egypt, including the tall and graceful date-palm of the desert, flourish with equal vigor and maturity in Louisiana.

Already numbers of substantial farmers from Indiana, Illinois, Iowa, Wisconsin and Ohio are selling out their farms and moving into the richer lands and better climate of Louisiana. Indeed, some entire portions of the State are rapidly passing into the hands of northwestern farmers, who design raising stock and grain. Just at this time there is a considerable excitement upon this subject. New Orleans and the country around are filled with northern and western men anxious to buy Louisiana estates. One of the largest and most intelligent farmers in central Illinois, has just passed through New Orleans on his way home, after a careful examination of the Attakapas and Tèche country. Said he, "I have heretofore thought that central Illinois was the finest farming country in the world. I own a large farm there, with improvements equal to any in the country. I cultivated about two thousand acres in small grain this year besides other crops, but since I have seen the Tèche and Attakapas country I do not see how any man can live in Illinois. I find that I could raise everything in Louisiana that can be raised in Illinois, and that I can raise a hundred things here which cannot be raised in Illinois. I find the lands easier worked in Louisiana, infinitely richer, and yielding far more; and with the fairest climate on earth and no trouble to get to market. I shall return to Illinois, sell out, and persuade my neighbors to do the same, and return to Louisiana to spend the remainder of my days."

This gentleman is well known, and he has given orders to a real

estate agency here to buy up large bodies of land for himself and his friends. This is an actual and now every day occurrence. The abolition of slavery, the failure and utter breaking up of the cotton culture, have thrown nearly all of the large plantations into the market at a nominal price; and the shrewd, practical farmers of the Northwest having heard from their soldiers, who invaded Louisiana during the rebellion, of the rich soil, the mild and healthful climate, and the innumerable productions of Louisiana, are coming by scores to this State, having sold out their impoverished lands in the Northwest, and having bought lands of inexhaustible fertility here at a low price. Louisiana can now compare, with every advantage in her favor, with the West and Northwest in the cheapness and fertility of her lands, while the Northwest cannot at all compare with Louisiana in climate, in mild and equable seasons, in yield to the acre, in variety and value of products, and its proximity to market and facilities for shipment; for the twenty thousand miles of navigation in Louisiana make it the best watered region on the globe, and independent of her numerous railroads, give her advantages in cheap transportation at all seasons over any region in Europe or America; and it is, to-day, the most inviting field on earth to the emigrant. Louisiana has a record as old as her history of her tolerance and kindness towards immigrants, and the large proportion of foreigners in her population shows that even with all the disadvantages which have heretofore beset her, and now happily removed, her genial climate, fruitful soil, and generous laws and people were not unappreciated. All that could tempt the emigrant to the West and Northwest can be found to greater advantage here, and already the tide is turning in this direction.

Let any one watch the daily quotations of the New York market, and let him note the difference between the prices of northern and southern flour, and he will at once perceive the immense superiority of southern flour.

The report of Judge Robertson to the Legislature of 1867, before referred to, says:

"The daily quotations show that southern flour, raised in Missouri, Tennessee, and Virginia, brings from three to five dollars more per barrel than the best New York Genesee flour; that of Louisiana and Texas is far superior to the former even, owing to the superior dryness, and the fact that it contains more gluten, and does not ferment so easily. Southern flour makes better dough and macaroni than northern or western flour; it is better adapted for transportation over the sea, and keeps better in the tropics. It is therefore the flour that is sought after for Brazil, Central America, Mexico, and the West India markets, which are at our doors. A barrel of strictly southern flour will make twenty pounds more bread than Illinois flour, because, being so much dryer, it takes more water in making up. In addition to this vast superiority of our grain, we have other advantages over

the Western States in grain-growing. Our climate advances the crop so rapidly that we can cut out our wheat six weeks before a scythe is put into the fields of Illinois; and being so near the Gulf, we avoid the delays in shipping and the long transportation, the cost of which consumes nearly one-half of the product of the West. These advantages, the superior quality of the flour, the earlier harvest, and the cheap and easy shipment, enable us absolutely to forestall the West in the foreign demand, which is now about 40,000,000 of bushels annually, and is rapidly increasing, and also in the Atlantic seaboard trade. Massachusetts, it is calculated, raises not more than one month's supply of flour for her large population. New York not six month's supply for her population, and the other Atlantic States in like proportion. This vast deficit is now supplied by the Western States, and the trade has enriched the West, and has built railroads in every direction to carry toward the East the gold-producing grain. We can, if we choose, have a monopoly of this immense trade, and the time may not be far distant when, in the dispensation of Providence, the West, *which contributed so largely to the uprooting of our servile system and the destruction of our property, will find that she has forced us into a rivalry against which she cannot compete, and that she will have to draw not only her supplies of cotton, sugar and rice, but even her breadstuffs from the South.*

Let us see what Northern men say in regard to the Northwest and West. In the monthly report to the Commissioner of the Department of Agriculture established by the United States at Washington, for the month of October, 1867, the Commissioner says: "In a tour to the Northwest, undertaken for the purpose of increasing and improving facilities for the collection of agricultural statistics, and for conference with professional or other intelligent agriculturists relative to department co-operation in aid of the interests and supply of the wants of that great section, the editor of this report was struck particularly with the ruinous tendency of the present system of wheat culture. Is proof of impoverishment needed? One witness only is wanted—the soil itself. First, thirty bushels per acre is the boast of the farmer; then the yield drops to twenty-five, to twenty, to fifteen, and finally to ten and eight. Minnesota claimed twenty-two bushels average a few years ago (some of her enthusiastic friends made it twenty-seven), but she will scarcely average this year twelve, and will never again make twenty-two under the present system of farming. To be sure, there are excuses. *The seasons do not suit, as formerly; blight or rust comes, or the fly invades—but all these things are evidences of exhaustion.*" And in the same report he says: "In the Northwest wheat culture is a parody upon the cotton culture of years past. It is running one product into excess, and ignoring all others. Northwestern cultivators are scarcely farmers, they are wheatgrowers. *Cattle are high in price, horses are very high, milk is scarce, and butter sometimes unknown; while straw stacks are burning, and wheat at the mercy of speculators and the railroads, and*

bringing prices only under the curse of God upon foreign wheat fields, and when foreign nations are in danger of famine; and even then, but a moiety comes from this country." And he might have added, that the cost of transportation to the Eastern or New York markets was ruinous to the farmer, as it now costs two bushels and a half of wheat to get one to market from the Northwest—that is, the Minnesota, or even the Illinois farmer, when he sends three and a half bushels of wheat to market, gets back only the proceeds of one, the other two and a half bushels having been consumed in transportation. In Louisiana the transportation may be altogether by water, and being, at all events, so close to the Gulf, it costs but little to get it to market, and the farmer will, out of three bushels shipped, realize an average of not less than the proceeds of two and a half bushels, thus having an enormous advantage over the farmer of the Northwest. Should the graingrower of the Northwest raise thirty bushels to the acre, while the Louisiana farmer raised but ten, yet the difference in the cost of transportation would put as much money into the pocket of the one as the other. But such is not the case, as the Louisiana lands are richer and yield more to the acre of every species of grain, and the climate brings the crop to maturity two months earlier than in the Northwest. Mr. Henry C. Carey, LL.D., of Philadelphia, the greatest political economist of America, whose "*Principles of Social Science*" and other works have been translated and circulated extensively in Europe, in a series of able letters addressed lately to the Hon. Henry Wilson, United States Senator from Massachusetts, referring in his tenth letter, specially to Louisiana, says:

"At the South, nature has provided for removal of all existing difficulties, having placed the farmer in such a position that not only is he nearer to the great markets for his products in their original forms, but that he may convert his wheat and his sweet potatoes into cotton, into pork, oranges or any other of the numerous fruits above referred to, for all of which he finds an outlet in the various markets of the world. Seeing these things, and seeing, further, that its whole upland country presents one of the most magnificent climates of the world, can it be doubted that the day is at hand *when emigration to the South and Southwest must take the place now occupied by emigration to the West, and when power is to pass from the poor soil of the Northeast to those richer ones which now offer themselves in such vast abundance in the centre, the South, and the Southwest?* As I think, it cannot."

And again, in the same letter, after having referred to the capacity of Louisiana not only to produce sugar, cotton and rice, but breadstuffs for the North and Northwest, he says:

"2d. Is it, however, for breadstuffs alone that the North is likely, with its present exhaustive cultivation, to be compelled to look to the South? It is not; the sweet potato, which can be grown on 'every acre in Louisiana,' and of which the yield, even at present, 'averages two hundred bushels to the acre,' has, during the war, been fully tested in feeding hogs; and, quantity and quality of the pork con-

sidered, been found to be *pound for pound* fully equal to Indian corn, of which the average yield of the States north and west of the Ohio is less than a third as much. With careful cultivation it has been known to yield more than six hundred bushels, or six times as much as can, with equal care, and close to Eastern markets, be obtained of the great staple of the North, thereby enabling those who are in the future to cultivate those rich Southern lands wholly to supersede the Northwest in the work of supplying animal as well as vegetable food to the people of the tropics and of Europe.

"Sixty acres to the hand, it is said, may be cultivated in grain. Combining with this the raising of cotton, the effect of diversification of agricultural pursuits is thus exhibited:

"Hops may be seen 'growing thriftily and bearing abundantly.' The State is 'prolific in native dye plants.' In its forests abounds 'nearly every variety of tree known in the United States.' For cattle raising it is perhaps the finest country of the world. Turn, therefore, in which direction we may, we find that nature has provided for that diversification of demand for human service for which we look in vain amid the fields of Northern States. Seeking for it in these latter, we find ourselves compelled to look below the surface, and there alone; yet there it is that Massachusetts, anxious to protect her pin and pipe makers, insists that it shall not be sought.

"The war has already made great changes, yet are they, as it would seem, but preliminary to greater in the future."

The Hon. Judge Kelley, representing the city of Philadelphia in the Congress of the United States, and one of the very ablest members of the present Congress, a gentleman of broad national views and far-reaching comprehension, having examined in person the States lately in rebellion, has recently made a tour into the Northwest, and while there was invited to make several speeches. Of these speeches *The Iron Age* of New York, says:

"Judge Kelley went with a voice of warning to the West, telling the people that henceforth, instead of finding a market in the South for their grain, and beef, and other food, that section will in future not only supply its own wants, but will be a competitor with the West for supplying other markets—a competitor, too, having advantages over the West which will eventually secure its triumph."

In his speech at Springfield, Illinois, September 20, 1867, Judge Kelley said:

"The South will not stop raising cotton, but will grow with it all manner of provisions, corn, hay, beef and pork. She will raise more cotton than ever. Every man will put part of his estate in cotton, and part in wheat, rye, barley, corn and sweet potatoes, and they will raise their own pork. Gentlemen of Illinois, allow me to say that they can give you five and beat you at raising pork. Do you believe it? I don't suppose one of you believes it, but it is nevertheless true that they can grow grain, with the exception of corn, successfully. They raise, for hogs, barley, sweet potatoes, peaches, etc. Does it not seem sacrilegious to raise peaches as food for hogs? yet they are

so prolific and grow so luxuriantly that wherever a stone is thrown and covered with soil there a tree will spring up that will need no grafting nor care. So that the peach is a good and cheap crop to feed to swine. They can raise six hundred bushels of sweet potatoes to the acre; two hundred bushels is the average crop under artless slave culture, leaving the best lands for cotton. The experiment was tried during the war of dividing two litters of pigs of the same age, pound for pound—one litter to be fed on Northern corn and the other on sweet potatoes. On arriving at maturity the corn-fed hogs had three per cent. advantage on the hoof over the potato fed; but when they came to be barreled, so much greater was the dripping by the heating effect of the corn, that the sweet-potato fed had the advantage. Where they mingle barley, of which they can get sixty bushels to the acre, they make better muscle and fat both." In this he referred directly to Louisiana by name.

Again, at Milwaukee, in the State of Wisconsin, on the 24th of September, 1867, after stating that he had just visited seven of the Southern States, he said:

"In support of these views, I have with me, but I am not going to detain you with extracts from it, an address made at the close of the agricultural, mechanical and industrial fair in New Orleans, by William M. Burwell, formerly of Virginia, in which the Southern people are urged, as they are by Mr. Robertson, to divide their lands; to remember that the South has three seasons; that wheat matures in the spring; that corn matures at midsummer; and that cotton is a fall crop—and advised them to take advantage of all the seasons. Those gentlemen agree, as do a score of writers whose articles I have here, in urging the people to put not more than one-tenth of their land in cotton, and the remainder in grass and diversified crops of food. They tell them that the South abounds in seaports; that the grain of every part of the South can be got to market in bulk in vessels in which a bushel of wheat may be carried twenty-three thousand miles—from San Francisco to New York—cheaper than it can be carried from Minnesota or Kansas to New York over railroads. They tell them that theirs is the early season; that they can avenge themselves upon the West and North, by preoccupying the markets. These are not pleasant tidings to bring to a people prosperous as are those of the West, and so identified with their present pursuits that they will yield them reluctantly."

In commenting on and indorsing this speech, an Iowa paper, the *Burlington Hawkeye* (a journal which faithfully and ably advocates the interests of American industry), in a late issue thus speaks on this matter:

"In Judge Kelley's speech at St. Louis, and a more recent one at Springfield, Illinois, he directed public attention to the important fact that a great and almost universal change of pursuits is taking place in the South, and that this change will necessitate as vital a change in the Northwest. Formerly, as he tells us, and as we all know, the whole cotton producing region received almost the whole of its food

for man and beast from this region. We supplied it with pork, horses, mules, wheat, corn, oats, hay; and in fact, all that the South lived on, except fresh vegetables, was produced here. The South devoted itself to producing cotton, sugar, rice and tobacco; whatever else it wanted it brought from the Northwest and East, and from Europe. All this is to be changed. While the South will hereafter raise a certain quantity of cotton, etc., it will also grow all the food it needs, and much to spare. It can do this with ease. Its soil is more fertile and its climate more genial than ours. Wheat, rye, corn, grow there to perfection. The yield is more abundant per acre, and the cost of getting it to an Eastern market or to Europe is less than it is with us. They also anticipate us with their harvest, and can put their surplus into the market sooner than we can. The result of these facts is that the Northwest not only loses its former nearest and most profitable market, but will have a new competitor in those which are left, and that competitor will have numerous advantages which we have not."

And the *Philadelphia Press*, Mr. Forney's paper, says:

"The social and industrial revolutions consequent on the great war of the rebellion are in no wise inferior to the political one. The South, driven to a knowledge of her true interest and fecund wealth by temporary misfortune, becomes a great corn and wheat-growing section. A few years since she was a buyer from the Northwest. Now she not only produces sufficient for her own consumption, but enters the market as a competitor—and a most formidable one—with her old suppliers. With water transportation against rail, and a crop that ripens two or three weeks before the Western sickles are sharpened, the South for the future commands the grain market of the New World."

These extracts are sufficient to show that the leading men and journals in the North and West begin to appreciate the wonderful advantages of the South over the North and West in grain and provision raising. All the chief lands of the Northwest now open to immigrants are more than a thousand miles from the seaboard markets, are nearly all devoid of sufficient timber, and the ground is frozen for five months of the year. So great is the severity of the cold there that the rivers and canals are frozen up nearly the whole winter and navigation stops, and the railroads are not unfrequently compelled to suspend operations on account of the heavy snows and winter storms. The growing season in the Northwest and Western States is only six months, and but a single crop can be raised on the same ground in the year. Cattle and stock of all kinds must be provided with winter food and housed for months at an enormous tax to the farmer, while the extreme cold imposes the necessity of constant fires and the most expensive woollen clothing and heavy fabrics for the inhabitants. In Louisiana the lands are near the great markets of the world, and are well timbered with the finest forests on the continent, for even with four millions of acres of prairie lands, these prairies are traversed by streams at short intervals,

and along their margins there is always an abundance of pine timber. Here the lakes and rivers are never frozen, and steamers and sailing vessels and railroads are never interrupted by cold. Ice is seldom seen, and frost rarely occurs. The growing season lasts the whole year; one crop is taken off and another is put in. Three valuable and abundant food and forage crops, each different, have been all raised on the same ground, one after the other, in a year, such as millet, then sweet potatoes—the potatoes for food and the vines for hogs—and then turnips or carrots, each yielding enormously and giving a rotation which benefits the land. Horses, cattle, sheep, hogs and goats can thrive on the winter grasses if necessary, and only seek shelter from the rains. And as the cold here is only bracing, not chilling, there is seldom need for heavy clothing, and many sit without fires during the whole winter, and without discomfort. Hence farming, gardening, and all outdoor work are carried on without cessation. And as for health, away from the cities, no State can compare with Louisiana.

As the West has grown rich by raising pork for market, the people of Louisiana are now directing their attention to it. Judge J. B. Robertson, in his essays on raising swine, says:

"In many parts of the North they dare not allow their sows to breed twice in the year for fear of the cold, while with us the sow breeds at any season of the year, and always twice, without the necessity of housing the pigs from the cold. This difference, and the losses from cold and overlying among the pigs in the North, and the well known fact that it takes more food to keep up fat in a cold climate, make at once a difference of nearly two to one in our favor in the increase. The tendency of all warm climates is to fully develop all animals, man included, earlier than in colder climates, and hence hogs arrive at maturity far earlier here than at the North. There is in this respect a wide difference in breeds, some arriving at maturity in half the time that others do; but in all breeds our climate produces maturity, and consequently the power of procreation earlier than at the North.

"I have known young jilts to receive the male at four months old, and bring forth their second litter of pigs within twelve months from their own birth. An astonishing increase is thus produced in a short time. I could cite an instance of a gentleman of veracity, who avers that he once produced three hundred head in one year from a single sow.

"Hogs are liable to very few diseases in Louisiana, for cold with man or beast is the prolific parent of ills, and the mildness of our climate is very favorable in this respect.

"While we can average only fifteen bushels of corn to the acre, we can raise everywhere in Louisiana an average of two hundred bushels of sweet potatoes. I have measured up six hundred and twenty-one bushels from an acre. With an ordinary plow and team a Louisianian devoting himself exclusively to the cultivation of the sweet potato, as the Western man devotes himself to the culture of

corn, can put in and cultivate more acres of the sweet potato than the Westerner can cultivate corn, with the same plows and teams.

"In breaking up his ground the potato planter can have the same labor-saving machine which the corn planter uses. In ridging up he can avail himself of a machine now in use that will prepare ten to twelve acres a day. While the corn needs several workings, potatoes need only two. While the corn planter of the West is limited to some six weeks as his planting season, the potato planter may plant from February to August. And machines have been invented and are in successful use, which perform the operation of digging potatoes far more perfectly and rapidly than any machines can gather corn. If, therefore, the potato planter avail himself of the labor-saving machine made for his purpose, he can cultivate and gather with ease more ground than can possibly be cultivated by any one in corn, by any means now available, and the yield will be nearly ten times as much potatoes as corn per hand.

"Again, barley averages in the North and West only a little over twenty bushels per acre, while in Louisiana it will average over fifty bushels to the acre.

"The level lands of Louisiana are better than the prairies of Illinois for the labor saving machines used in the culture of small grain. With these two crops, and no other advantages, we could defy the competition of the Northwest in hog raising. Barley makes muscle and firmness of bone, and is far superior to corn in giving body and frame to the hog, and is everywhere used for this purpose where it is not too dear. Barley is far better than corn for feeding work stock in summer during the cultivating season, as corn makes fat and is heating, while barley makes muscle and is cooling. Barley comes early in the season, and may be used in raising the pigs, and in preparing the hogs for fattening.

"Experiment has shown that a bushel of sweet potatoes will go quite as far or farther in fattening a hog as corn. It is shown that the saccharine matter and starch in the sweet potato produces quite as much fat as the starch and oil of the corn; and while quite as firm, it is far sweeter and more delicious than the fat produced by corn, and does not run like corn fat or lose in weight while curing. In addition to the advantages we have in the sweet potato and barley, there are many others which our climate gives us. Our pastures are always green, and while the Northern hog-raiser is feeding from his crib his whole stock of hogs for six months, and housing them from the severity of a winter which leaves no sprig of green grass, our clover pastures are white with blossoms and, with a variety of other grasses, furnish abundant sustenance to our hogs and cattle. At the same time, too, our forests are filled with acorns. This item alone, of saving winter feed, immensely lessens the cost of hog raising here."

Louisiana can defy comparison with any other country on the globe in the substantial and luxurious comforts of her homes. We will describe an actual one, of which there are many counterparts in

the State. Near the Gulf, on a small stream or bayou, as they are called from the native Indian tongue, is a well built house with broad porches around it. The grounds are well planted with a great variety of flowers, shrubs, and evergreen shade and forest trees, bordered with bananas and groves of tall pecans, yielding delicious nuts; near at hand is a garden plot filled with rare flowers blooming the year round in the open air, and now, in the last of December, filling the air with their perfume. In the rear is an extensive vegetable garden, from which may be taken, any summer's day, full twenty species of vegetables for the table, and in which now, in mid winter, may be seen cabbages, kohlrabbi, cauliflower, broccoli, lettuce, spinach, cresses, mustard, turnips, carrots, beets, parsnips, radishes, onions, leeks, eschalots, parsley, green peas, egg plants, salsify, rhubarb, okra, celery, and others. Close at hand is an orange grove on one side, loaded with golden fruit, on the other side is an orchard of peach, apple and pear, plum, fig and quince trees, with here and there pomegranate and persimmons. A vine trellis is loaded with vines of many varieties; here is the mespilus or Japan plum, some in full bloom, others with the fruit half grown, ready to ripen in February. Blackberries, raspberries, strawberries, currants, and gooseberries grow in the garden each in its season. Bee hives surround the yard. A dairy well filled with milk, cream, butter and buttermilk. In front of the house, and connected with the bayou, is a fishpond well stocked with fish and surrounded by osier willow. Extensive poultry yards contain turkeys, peafowls, guineahens and chickens of all kinds. A dove cote is swarming with pigeons, each pair of which furnish fat squabs ten times a year for the table; any number of geese and ducks may be seen sporting in the bayou. A large cowhouse is stocked with sleek cows, which keep in full flesh on the ever green grass alone. Sheep, goats, hogs, horses, mules, fat calves and bullocks may be seen everywhere in the pastures. Large deep underground cisterns furnish pure drinking water in abundance. The sea breeze moderates the heat of summer and tempers the cold of winter. Bear, deer, cranes, wild geese, brandt, ducks, quails, woodcock, snipe, doves and squirrels abound, while near at hand the Gulf teems with the finest fish, oysters, crabs and shrimps. Good roads and convenient railroad and water transportation furnish quick and certain means of access to market. This is no fancy sketch, and any one may have all these comforts and many more with but little effort in this favored clime. What a difference between this State and the Northwest! Now, while the icy hand of Winter and his snowy mantle forbid all outdoor labor at the North, here the plow is busy preparing the ground for the coming harvests, and the air is only bracing in its temperature.

ART. IX.—IRON AND STEEL.

REPORT OF MR. HEWETT, UNITED STATES COMMISSIONER TO THE PARIS EXPOSITION,
ON THE NEW PROCESSES, RESOURCES, AND PRESENT CONDITION OF THE IRON AND
STEEL INDUSTRY THROUGHOUT THE WORLD—HOW ENGLAND AND FRANCE CAN
UNDERSELL AMERICA.

We publish this report as embodying a large amount of valuable observation. It is perhaps a document so damaging to the morality—we might almost say to the humanity—of free labor that it would scarcely have been published some years ago. It takes away all reproach from those who had given so much comfort and happiness in exchange for labor. That the slave system, which could receive no Southern vote for its restoration—was the best bargain the laborer even made in exchange for his work, is now obvious. This assertion is confirmed by the exposure of the labor systems of Europe made by the report.

Our Southern readers should read with great interest what is said of the coal measures of Virginia and Alabama. They must see that the day is coming when the world will need the dynamic force latent and inactive in that favored region. Few reflect that within those mines slumbers a productive force surpassing a thousand fold the physical ability of all the freedmen in the South. Still fewer of those who plan the political regeneration of the South, and the supremacy of the white race, remember that in those mines of coal and iron reside the capacity to govern the ignorance and incompetency of society. The perusal of the report will explain how this important result is attained through a similar agency in Europe.

We are compelled to omit those portions of Mr. Hewett's report which describe the specimens of ore and products of iron and steel exhibited at the Exposition, and new processes employed in their manufacture, and the works at which they are made. This information, though forming the body and main object of his report, is of interest only to those practically engaged in the iron and steel manufacture, and is too voluminous to be inserted here. The following is the conclusion of his report, and presents those general considerations relative to the world's resources for the manufacture of iron and steel, and the social condition of those engaged in it, which will interest the general reader:

THE PRODUCTION OF IRON.

Allowing for the production in barbarous countries, and something for the use of scrap iron, it may be stated in round numbers that the production, and consequently the consumption of the world has reached 9,500,000 tons of 2,240 pounds each, or 21,280,000,000 pounds; so that if the population of the world has reached 1,000,000,000, a consumption of a little over 20 pounds of iron per head. A careful calculation, after allowing for the iron exported, shows that the consumption per head in England is 189 pounds of iron. The consumption in Belgium has reached about the same limits. The consumption in France is 69½ pounds per head, and in the United

States not far from 100 pounds per head. If the industry of the whole world were as thoroughly developed as it is in Great Britain, the consumption of iron would reach nearly 90,000,000 tons per annum. If brought to the standard of the United States, a little less than 50,000,000 tons per annum would answer; or if to that of France, a little over 30,000,000 tons would be required—figures to be increased further by the steady increase of population in the world.

It will be interesting, therefore, to inquire into the sources of future supply possessed by the nations upon whom this great demand must come. Sweden possesses exhaustless supplies of the very richest and best kinds of primitive ore, but she has no coal, and a heavy expense for transportation must be incurred in bringing coal and ore together, and, as a general rule, it is found more economical to transport the ore to the coal, than the coal to the ore. The limits of the manufacture of iron by wood have long since been reached, and hence Sweden can only be looked to as a source of supply of ore to other countries possessing mineral fuel when their iron mines are too heavily drawn upon.

In Russia, also abounding in immeasurable supplies of ore, there is a possibility, but not much probability, that mineral coal may be developed to an extent sufficient for its own supply of iron. The production of charcoal iron is also capable of some, but not of indefinite extension.

The same remark applies to Austria and the States of the Zollverein. In Italy there is no coal, and hence its rich ores are in the same category as those in Sweden, only far less abundant. Algiers abounds in ore, which has to be transported to the coal. Spain is rich in ore, and has a carboniferous formation on its northern borders, but no attempts have been made to render it available for the production of iron. In France the present manufacture of iron is only maintained by the aid of the importation of coal to the extent of over 7,000,000 tons, and of 477,187 tons of iron ore in 1865.

In Belgium, the size of the coal-field, the vertical character of the veins, and their small thickness, render it impossible that there should be any very considerable extension of the business, at least if the supply is to endure for any protracted period. Already it is estimated that Belgium produces as much coal as France, two-thirds as much as Prussia, and one-eighth that of Great Britain, and that out of a coal-field only 97 miles in length and 12 miles in breadth at its widest point, and in veins of from 30 inches to three feet thick. Belgium is already an importer of ore, and although it is quite evident that it will be the seat of a vigorous and possibly increasing metal industry for years to come, it has no resources adequate for serious competition in the supply of the greatly increased quantities which the world will yet require.

Prussia has a somewhat larger supply of coal than Belgium, and it is remarkably rich in quantity and quality of its iron ores; but it is scarcely possible that in the future she can do more than supply

her own wants. Upon England, then, so far as Europe is concerned, still rests the great burden of supplying the world with iron, if the supply is to come from Europe at all. It has been seen that already nearly one-half the total consumption of the world comes from within her borders. In 1866 she was able to furnish 9,665,013 tons of iron ore, and only imported 56,689 tons. A careful survey of the sources from which her ore is derived leads to the conclusion that in Wales the local supply is not adequate to the present consumption, and large quantities are transported thither from other parts of the Kingdom.

The natural limits of production have, therefore, been reached in Wales, although there will probably be a still further extension of the business in that region either with domestic or foreign ores, in consequence of the possession of enormous supplies of admirable coal available for the furnace without coking. The Staffordshire region, by common consent, has reached its culminating point, and a careful consideration of the local supply of carbonaceous ore in Scotland would seem to indicate that not much extension of the business is possible in that region except at much higher prices than now prevail. The main reliance in Scotland has heretofore been upon its blackband iron ore, "and the development of its iron trade has been coextensive with the exploration of that famous mineral, furnaces following everywhere in the wake of its discovery. The clay bands are in such small seams, and of such irregular character, that the business would soon languish and be greatly reduced if dependent upon them alone. The thickband, commonly called the 'air-drie,' is now substantially exhausted, and the reliance is on seams of no greater thickness than eight inches. Blackbands are notoriously irregular, and are not found uniform in thickness; for example, the airdrie blackband occupies but a small portion of the space allotted to it in the Lanarkshire coal-field. A more notable example of capriciousness of blackband is to be found in the slaty band, which occurs occasionally in patches of irregular thickness, sometimes six inches and sometimes six feet in thickness; but there is always something to mark its position, either a coal or iron stone. Indeed, all the iron stones in all portions of the coal-field are erratic. They are persistent throughout in no field, yet it is a singular fact that we have in all the fields blackband iron stone." This extract from a paper of Ralph Moon, the Government mining inspector in Scotland, is made for the double purpose of showing how impossible it is that there should be any considerable increase in the annual product of Scotch iron unless foreign ores are brought to utilize the unlimited supplies of admirable coal which exist in that country; but with the further object of giving some information which may be of use in the development of the blackband iron ores which have been recently discovered in Schuylkill County, in Pennsylvania, the value of which to the country can hardly be exaggerated, if it should prove to be in quantity and quality equal to its British prototype.

There still remains upon the east coast of England the great Cleve-

land region, and upon its west coast the Cumberland or red hematite region. The latter is now yielding about 1,400,000 tons of ore per annum, taken from beds of irregular shape and formation, in or adjacent to the limestone. There are certainly no signs of exhaustion yet apparent in this wonderful district, but all analogy leads us to doubt the permanency of these irregular beds, formed in pockets in the rocks, without any regular walls to indicate their continuity. Beside, the extremely good quality of this ore and the value of the iron which it produces will always restrict its use to those better purposes for which a high price is paid, and naturally withdraws those mines from any competition in the supply of the great mass of iron required by the world for ordinary purposes. Not so, however, with the Cleveland region, where the ore exists in beds of from eight feet to fifteen feet in thickness, in the lias or volitic formation, extending over a tract of country forty miles in length and fifteen miles in width. This ore is lean and the quality of the iron inferior, but by the application of a high order of skill a quality is produced sufficiently good for the ordinary purposes of commerce, and at a cost below that of any other locality in the world. The consequence has been that, since the erection of the first blast furnace in 1850, 125 furnaces have been erected, and 14 more are now in process of erection; 27 rolling-mills and a large number of iron ship-building yards are in operation, and cities have grown up with a rapidity and to a size that would strike even a Western pioneer with surprise. The present production exceeds a million of tons per annum, and it is difficult indeed to assign any limits to its future growth. But there is one limitation which applies to the whole question of the production of British iron, and that is, her ability to supply coal on the scale of consumption already beyond 100,000,000 tons per annum. This question has received the serious attention of the British Association for the Advancement of Science, and Mr. Gladstone, by one of those happy ellipses characteristic of men of genius, has coupled the extinction of the national debt with the exhaustion of the supplies of fuel, evidently acting under the idea that an honest man ought to pay his debts while his capital lasts.

It is presumed, however, that there is still margin enough for the addition of the "Alabama claims" to the sum total of indebtedness, without seriously interfering with the means of payment which the coal fields afford. So far as the production of iron is concerned, and so long, at least, as any human being now in existence may have an interest in the question, I see no good reason to doubt why England should not maintain her position, as the source from which one-half the required amount will be obtained; but beyond this I do not think she can or will go, from the intrinsic difficulties of producing the required supply of materials and labor, without an enormous increase of cost. There will, therefore, remain a very large deficiency, which must be supplied from some other source, and that source can only be the United States of America, for in no other quarter of the globe are the supplies of ore and coal sufficiently large, or so related

to each other geographically as to admit of its production, not merely within reasonable limits of costs, but on any terms whatever.

OUR IRON RESOURCES.

The position of the coal measures of the United States suggests the idea of a gigantic bowl filled with treasure, the outer rim of which skirts along the Atlantic to the Gulf of Mexico, and thence, returning by the plains which lie at the eastern base of the Rocky Mountains, passes by the great lakes to the place of beginning, on the borders of Pennsylvania and New York. The rim of this basin is filled with exhaustless stores of iron ore of every variety and of the best quality. In seeking the natural channels of water communication, whether on the north, east, south, or west, the coal must cut this metalliferous rim, and, in its turn, the iron ores may be carried back to the coal, to be used in conjunction with the carboniferous ores, which are quite as abundant in the United States as they are in England, but hitherto have been left unwrought, in consequence of the cheaper rate of procuring the richer ores from the rim of the basin. Along the Atlantic slope, in the highland range from the borders of the Hudson River to the State of Georgia, a distance of one thousand miles, is found the great magnetic range, traversing seven entire States in its length and course. Parallel with this, in the great limestone valley which lies along the margin of the coal field, are the brown hematites, in such quantities at some points, especially in Virginia, Tennessee, and Alabama, as fairly to stagger the imagination. And, finally, in the coal basin is a stratum of red fossiliferous ore, beginning in a comparatively thin seam in the State of New York, and terminating in the State of Alabama in a bed 15 feet in thickness, over which the horseman may ride for more than 100 miles. Beneath this bed, but still above water level, are to be found the coal seams, exposed upon mountain sides, whose flanks are covered with magnificent timber, available either for mining purposes or the manufacture of charcoal iron. Passing westward, in Arkansas and Missouri is reached that wonderful range of red oxide of iron, which, in mountains rising hundreds of feet above the surface, or in beds beneath the soil, culminates at Lake Superior in deposits of ore, which excite the wonder of all beholders; and returning thence to the Atlantic slope, in the Adirondacks of New York, is a vast undeveloped region, watered by rivers whose beds are of iron, and traversed by mountains whose foundations are laid upon the same material, and in and among the coal beds themselves are found scattered deposits of hematite and fossiliferous ores, which, by their proximity to the coal, have inaugurated the iron industry of our day. Upon these vast treasures the world may draw its supply for centuries to come, and with these the inquirer may rest contented, without further question, for all the coal of the rest of the world might be deposited within this iron rim, and its square miles would not occupy one quarter of the coal area of the United

States. With such vast possessions of raw material, we are naturally brought to the consideration of the elements which enter into the cost of producing iron in the United States as compared with the other iron-producing countries of the world.

COST OF PRODUCTION.

And first, the distinction must be drawn between the cost determined by the quantity of labor expended in the production of a tun of iron and the cost in money as determined by price paid for the labor. The former is the absolute and natural cost, and is the only just standard of comparison between nations, if national wealth is defined to be the amount of capital in existence, plus the amount of labor available for production. The other is the artificial or accidental cost, of which, indeed, we may take advantage in our buying or selling, but forming no just standard of comparison in estimating the relative cost of production in different countries. There is a difference, familiar to all in the United States, between the cost of articles measured by gold or by currency, which makes it, for the time, easy to understand the difference in cost measured by money or by day's labor.

England, having the largest and most accessible stores of coal and iron ore, can produce a tun of iron with less labor than any other European nation; hence it will be most profitable to institute the comparison of cost measured by labor, first, with Great Britain. In the Cleveland region, which is most favorably situated for the cheap production of iron, the cost of producing a tun of pig iron is about 40 shillings, which, at the average rate of wages paid around the blast furnace, is equivalent to 11 days' labor—that is to say, the labor of 11 men for one day. It is possible that in one or two works this may be reduced to 10 days, but in others it rises to 12 or 13. In the United States, the cheapest region for the manufacture of pig iron, as yet extensively developed, is on the Lehigh River in the State of Pennsylvania, where, taking coal and ore at their actual cost of mining, pig iron is produced at an average cost of \$24 per tun, which represents, at the present rate of wages, the labor of about 13 days. But when the iron business is established along the great valley which extends from Virginia to Alabama, the labor of bringing the coal and ore together will be considerably less than on the Lehigh River, and it is safe to say that there iron can be made in any required quantity, when the avenues of communication are sufficiently opened, with as little labor, to say the least, as it can be produced in the Cleveland region. In France, Belgium, and Prussia, each now requiring a larger expenditure of human labor to produce a tun of iron than is required in England, there are no such possibilities of reduction, because every year their ore is becoming more expensive, and the cost of mining coal will increase more rapidly than in England, in consequence of the size and character of the veins. Hence follows the deduction that if France, Belgium, and Germany are to compete with England in the open markets of the

world, the competition can only be maintained by the payment to labor of a lower rate of wages; or, to state it in another form, the greater the natural advantages possessed by a country for the production of iron, the larger will be the rate of wages paid to the workman; and this is found to be verified by existing facts.

From the Statement published by Schneider & Co., at Le Creuzot, it appears that the average rate of wages paid in 1866, for the whole of the 10,000 workmen employed at this great establishment, was 3.45 francs per day.

Here follow tables of the wages paid in France and England.

A comparison of the tables shows that, for every franc paid in France, there is more than a shilling paid in England, and this corresponds with the general statement made by M. Schneider to me at Le Creuzot. Assuming a little more than a shilling to the franc, 3s. 6d. per day would appear to be the average rate of wages paid in England for labor in iron works of all kinds, skilled and unskilled, and in no part of England does it exceed 4s.

A comparison of the tables shows that the rate of wages is higher in Great Britain than in Belgium, and higher in Belgium than in France, being certainly in the order, and nearly in the ratio, of the natural advantages of these countries for the production of iron; and this view is confirmed by the selling price of iron in the respective countries at the present time, when it is admitted on all hands that there is no profit to the maker.

The price of merchant bar iron at the works

In England, is.....	£6 10 per tun.
In France.....	8 0 (200 francs) per tun.
In Belgium.....	7 0 (175 francs) per tun.

The difference between the cost of French iron and Belgian and English, aside from cost of transportation, which is very light, is compensated by the import duty, which, on iron from England and Belgium, amounts to sixty francs per tun. Independently of this tariff, which admits of a considerable importation of iron into France, it would not be possible for the iron business to be continued on any considerable scale, for the reason, as will be seen, that the wages are already at the lowest possible point consistent with the maintenance of human life in a condition fit for labor, the average earnings of all the workmen, skilled and unskilled, employed in an iron works, being at the rate of 3.45 francs per day, or about 66 cents per day in gold; the great mass, however, of common labor receiving less than 50 cents per day in gold. In order to estimate the purchasing power of this sum, it is necessary to give the prices of the principal articles required for the support of life, and for this purpose I have selected the department in which Le Creuzot is situated, as the proper locality for comparison, with the rate of wages there paid:

Wheat bread.....	0.25 francs per lb, equal to 5 cents in gold.
Rye bread.....	0.20 francs per lb, equal to 4 cents in gold.

Beef.....	0.65 francs per lb, equal to 13 cents in gold.
Mutton.....	0.75 francs per lb, equal to 15 cents in gold.
Veal.....	0.75 francs per lb, equal to 15 cents in gold.
Pork.....	0.75 francs per lb, equal to 15 cents in gold.
Chickens.....	1.00 to 2.50 fcs., equal to 20 to 50c. in gold.
Geese.....	3.00 francs, equal to 60 cents in gold.
Ducks.....	1.50 to 2.00 fcs., equal to 30 to 40c. in gold.
Butter.....	1.00 francs per lb, equal to 20 cents in gold.
Dozen eggs.....	0.50 to 1.00 fcs., equal to 10 to 20c. in gold.
Potatoes.....	0.50 fcs. per decalick, equal to 40c. per bush.
Ordinary wine.....	0.40 francs per litre, equal to 5 cts. per pint.
Beer.....	0.25 francs per litre, equal to 3 cts. per pint.

House rent is cheap; a small, ordinary, but comfortable house, with a garden, renting for \$16 per year in gold. Clothes are also cheap, costing not more than half the price of similar articles in the United States; but fuel is rather dearer on the average. It does not require any very extensive observation in order to verify the obvious conclusion deducible from the above figures, that the general condition of the working classes in France, from a material point of view at least, is simply deplorable. It requires the utmost economy on the part of a laboring man, and the united labor of his wife and his children, to keep his family in existence; and it is the accepted rule and practice for such a family to have meat but once a week; and any change in this condition of affairs, involving a change in the remuneration paid to the common laborer, would put it out of the power of the iron-masters of France to carry on their business, in competition with Belgium and England, in the absence of a higher tariff on imports. The existence of the iron business in France, therefore, as a national branch of industry, may be said to rest upon the elementary condition of giving meat once a week only to the great mass of laborers who are engaged in its production. In Belgium, substantially the same state of affairs prevails. In the dispatch of Lord Howard de Weldon, the British minister at Brussels, to Lord Stanley, dated February 11, 1867, on the subject of Belgian industry, he says: "The characteristics of the Belgian workmen are steadiness and perseverance, combined with great intelligence in working after models; their habits are not so expensive as those of English artificers; their diet is more humble, they consume less meat, and their bread is seldom purely wheaten or white in quality; rye, and the cheaper quality of wheat called 'epeantre,' enter in great proportion into the composition of the loaf; beer and spirits are both lower in price than in England; they seldom use tea, and the chicory root consists a very economical and wholesome substitute for coffee. * * * * The system of schools for infants from two to seven years, and from seven to twelve years, is very general, and affords great facilities—the children being cared for—to both their parents to occupy themselves in daily service, and by combined industry to ameliorate the condition of their family. In all these respects, therefore, the necessities of life being the base of wages, the Belgian enjoys advantages over the British workman."

From our American point of view, these "advantages over the British workman" in dispensing with meat and tea, and in substituting chicory for coffee, and in appropriating the labor of both parents for a mere existence, are not so apparent. But we are naturally brought by it to consider the condition of the British laborer.

It has been seen that the natural advantages of Great Britain, in the possession of its vast stores of coal, affords a fund for the payment of better wages to the laborer in England than on the Continent, and the British workman has not been slow to assert his rights to all he can get, and his physical condition is undoubtedly superior to that of his French and Belgian neighbors. If he is not better lodged, he is at least better fed, and in the iron works it is probable that the workmen generally get meat once a day. But, as a general rule, the labor of the women and children is required in order to eke out the subsistence of the family. In Wales, women are extensively employed in the works, doing the labor for which a man would be required in America, and earning from ten pence to one shilling three-pence per day, or rather less than half the wages that would be paid to a man for the same labor, which they perform equally well. In Staffordshire, and in the north of England, and in Scotland, women and children are still extensively employed above ground about the mines, and around the coal heaps at the mouths of the pits, the substantial result of which is that the labor of the whole family is procured for the sum which would be paid to its male head, if he alone labored for the support of the family, of course at a far lower cost in the resulting production of iron than would otherwise be possible. Restraining laws have been enacted in England of late years in regard to women and children, limiting the number of hours during which they may be employed, and also providing that they shall not be employed during the night, except in certain specified cases. But if the women and children were altogether withdrawn from those occupations, as they are in the United States, it would not be possible to produce iron, except at a considerable advance on its present cost.

Passing from the material to the intellectual condition of the workmen in France and England, the provision for the education of the children is upon a very limited scale indeed, and although there are creditable exceptions in particular localities, mainly due to the enlightened conscience of the proprietors, the great mass of the working classes out of the large cities are deplorably illiterate. In the department of Saone et Loire, where the works of Le Creuzot are situated, and where the most commendable efforts are being made by Messrs. Schneider & Co., to educate the rising generation, it appears that 36.19 per cent of those who were joined in marriage in 1866 could not write their names, and of the conscripts drawn for the army from the same department, in the same year, 24.51 per cent were unable to read. And the same statistics show that, taken as a whole, in nearly two-thirds of France the number of those who cannot write their names on marriage is between the limits of 30

and 75 per cent of the total number. This deplorable state of affairs has of late led to the establishment of schools for the instruction of adults, mostly voluntary, upon which there were in attendance during the present year 829,555 adults, of whom 747,002 were men, and 82,523 were women. Of 110,503 who could neither read nor write on entering the course in October, 1866, 87,211 had learned to read by the 1st of April, 1867; 12,632 instructors have given their service gratuitously, and the whole movement, and the statistics above given, prove both the depth of ignorance into which the working classes have been plunged, and their earnest desire to emerge from it.

Surprise may be expressed that in view of the inadequate reward for labor in France, there has not been a larger emigration to our own country, where labor is so much better paid. The difficulties arising from the difference in language would of themselves be a great impediment to any extensive emigration movement; but there are impediments of another kind, and generally understood, which tend to prevent any relief to the laboring classes from this source. The law of "livret," as it is called, is peculiar to France. By its terms every workman is compelled to obtain from the police a kind of pass-book or register, in which his name, age, and occupation are inserted, and which he must show to an employer before being taken into his service, and no employer is permitted to receive into his works any workmen upon whose "livret" is not indorsed a full discharge from his previous employer. Provision is also made for the indorsement upon the livret of any indebtedness which may be due from the workman to the employer, and his debt, therefore, follows the workman as a mortgage upon his labor from place to place. Although, in express terms, there is nothing in the law which would warrant the employer in withholding an endorsement on the livret, yet in practice it is a restraint on his freedom of action to such an extent that workmen employed in the large works usually remain there permanently, so that there is but little change, and no opportunity whatever for practical combination in strikes and turnouts. The whole of this system is very peculiar, and throws much light upon the power it gives to produce iron at a cost which would not be possible if the workman were a free agent.

The moral condition of men is so dependent upon their physical and mental status that it is probably unnecessary for me to enlarge upon the obvious conclusions that might be inferred from the facts above recorded; but the conviction in my own mind was so profound, after a very careful survey of the whole field, that I deemed it my duty to accept an invitation to testify before the Trades Union Commission in England, in the hope that a full discussion of the physical and moral elements involved in the organization of industry would result in the ultimate elevation of the working classes of Europe to such standard, at least, as would render the conditions of competition between our own country and Europe more just and equitable. It is quite evident that in the effort to produce cheap commodities, and to

undersell each other in the markets of the world, the rightful claims of humanity have been disregarded to such an extent that the reorganization of labor in its relation to capital is felt by all thoughtful men to be an imperative necessity.

It cannot be that the aim of society is only to produce riches. There must be moral limits within which the production of wealth is to be carried on, and these limits have been and are being so obviously transgressed that a spirit of discontent pervades the entire industrial world; and in the very countries where this competition has been pressed to its utmost limits capital has ceased to become remunerative, although humanity itself has been sacrificed to its demands.

But if, in comparison with the ample provision made in our country for the education of the masses, the arrangements in France and England are upon a meager scale, the opportunities for scientific and technical instruction, in France especially, are of a far more complete and generous character. For the governing classes, or for those who, rising out of the lower ranks, are educated to fill positions of trust and responsibility, there exists a series of educational establishments of so thorough a course in their respective departments as to exhaust all that experience and science can do for the preparation of engineers and conductors of industry. The Ecole Centrale des Arts et Manufactures at Paris, the Conservatoire Imperiale des Arts et Metiers, several large agricultural schools, L'Ecole Imperiale des Ponts et Chaussées, L'Ecole Imperiale des Mines, L'Ecole Imperiale de Commerce à Paris, the three schools des Arts et Metiers at Chalons, Aix, and Angiers, the School of Mines at St. Etienne, the School of Watchmaking at Cluses, of the Mining Classes at Alars, the Naval School at Marseilles, are all sustained by the Government in the interests of industry and commerce, and give to French industry that intelligence, science, and skill, which, in the Exposition, extorted universal admiration, and the general confession that its products, even in machinery and metals, were up to the highest standard of excellence. Similar schools in the United States ought to be the fruit of the great endowment of lands given to the States by Congress for the establishment of institutions designed to teach mechanical and agricultural science and art; but it is to be regretted that, at the present time, the application of this grant has not been so directed as to secure such a result, and we must console ourselves with the reflection that, if we are deficient in the higher education necessary for the best industrial development, we have in a measure supplied its place by a general diffusion of knowledge, which, evoking the ingenuity and individuality of each workman, has rendered it less necessary than in countries where the masses are in ignorance. But it cannot be disputed that this individuality and ingenuity in our American character will be more valuable and powerful when directed by the highest order of intelligence and thoroughly trained scientific leaders.

(To be continued.)

ART X.—DEPARTMENT OF INTERNAL IMPROVEMENT.

SOUTHERN RIVERS.

THE article on the improvement of the Mississippi by Mr. Stein, one of the oldest and ablest writers on hydraulics and hydrostatics, will be found very instructive. It advances a theory upon the much controverted question, how the current of the Mississippi shall best be regulated. Upon this question it is wholly unnecessary that we should take sides. The reparation of our levees, the protection of our lands from inundation and the deepening of the Mississippi outlets, are objects of so much moment that we leave to practical experiment and scientific discussion to determine how they shall be executed.

IMPROVEMENT OF THE MISSISSIPPI RIVER.

The Mississippi river, from Fort Jackson to the point where it divides into several branches or outlets, called Passes, a distance of about 20 miles, flows with an average width of about 2,500 feet, and a mean depth of about 70 feet. After dividing, it is converted from one concentrated, energetic current into a number of feeble, sluggish streams, spread over an extensive surface as they discharge themselves into the Gulf of Mexico. The volume of water being thus divided and distributed, it is easy to account for the little depth found on the bars of the several Passes.

The length of the Southwest Pass, from the point where the river divides, is about 16 miles, of which twelve miles afford a depth sufficient for the largest vessels.

The lower portion of the Southwest Pass, near the Gulf, is much wider than the upper. This is a natural result of the opposition of the tidal to the fresh water current, with the consequent increase of lateral action, and also of the action of the waves propelled from the Gulf by frequent heavy gales. The effect of the Gulf tide, on the one hand, is, by its resistance, to impede the discharge of detrital matter from the river, and to cause it to accumulate at the mouth; while on the other hand, the effect of the ebb or out-flow of the tide, in combination with the fresh water of the river, is to scour out or sweep away these impediments, and keep the Pass open. In endeavoring to improve the navigation at the mouth of the river, therefore, our efforts should be to increase the power acting from within, and so to regulate the channel and direct the energy of the current, as to cause it to overcome the force from without. The greater this preponderance of the inner over the outer force, the greater will be the depth of water upon the bar. As the depth of the channel of a river at its mouth, is entirely dependent upon the excess of the inner over the outer force, it follows that the main object of any system of improvement should be to increase the former as far as practicable, and to diminish the latter. This can be done only by a judicious regulation and correction of the channel. The course of the stream being properly regulated, and the whole power of the current brought to bear upon the bottom of the channel, the increased energy of the current, combined with that of the out-flowing tide, at its ebb, would soon scour out the bed, lower the bottom, and consequently increase the navigable depth.

If the channel of the Southwest Pass were regulated upon the principles above laid down, the feeble current that now passes over the bar would be increased with new energy, and obtain a scouring power sufficient to sweep the bar into the deep waters of the Gulf. The depth of the Pass at its mouth might be rendered even greater than would be necessary for the admission of the largest vessels.

Those who, a few years ago, advocated a system of confining the current at the mouth of the Pass between parallel works, would not have succeeded,

if the plan had been carried out, in effecting any permanent improvements. They contended that, the farther the mouth of the river was projected into the Gulf, the greater would be the depth to be filled by the deposits of detrital matter from the river, and the longer the time required for the formation of a new bar; and that the action of the lateral current, which sets along the northern coast of the Gulf, would also assist in retarding the formation of a new bar in front of such works.

It has also been proposed of late to deepen the bars at the mouth of the Mississippi by constructing converging walls, from 2 to 2½ miles in length, on each side of the Pass, their lower ends to reach the outer sides of the bar, and by thus discharging the current upon the bar between the contracted limits to remove all impediments to navigation. The converging walls to direct the current of the river, so as to carry off the deposits now precipitated where the waters of the river meet those of the Gulf.

The objections to this plan are, that the converging walls would lessen the quantity of flood water, and consequently that of the ebb or out-flow, by which only the outlet can be maintained; that they would cause a stagnation of the current, above the contracted mouth, in the wider part of the channel; that the bar would still be formed in front of the converging walls; and that these works would diminish the preponderance of the river power—the most effectual agent for keeping the bar at the lowest possible level. The theory that the bar results from the outflowing current becoming inert at its meeting with the waters of the Gulf, and thus depositing the matter held in suspension, is refuted by the fact that this meeting takes place at a point considerably outside of the bar, and, instead of a stagnation occurring, the outward stream becomes gradually merged in the coast current, both as regards its rate and direction. The execution of such a plan would be the most effectual means of destroying the navigable capacity of the Pass.

As for attempting to obtain a permanent increase of depth, by means of dredging operations, the effect would be entirely futile, for the material composing the bar, would be replaced almost as fast as it could be removed.

The bar of the Pass is composed of detrital matter, very fine sand, and mud, so extremely soft and loose that a man, with very little exertion, can force a pole through it to the depth of ten or fifteen feet. Through such a soil, it would be impossible, even by the most complete and expensive system of dredging, to open a channel that would continue open long enough to be of any practical use.

We find in a late report the opinion expressed that the stirring up of the bottom by dragging harrows or scrapers would be the best and cheapest plan of deepening the bars, and that, the formation of the bars being an unintermitting, advancing, progressive one, the operations for the removal of the same should be continued without interruption, and the necessary means appropriated. This is only a variation of the ordinary system of dredging, the Danaid's labor of drawing water in perforated vessels—an endless as well as a hopeless task.

It has also been proposed to substitute for the Southwest Pass, as the navigable entrance to the river, a ship canal from some point near Fort Jackson to the Gulf. The river Mississippi, from the quantity of the sedimentary matter brought down by its waters, cannot, in the present condition of the channel, clear out the bar at the mouth of the Southwest Pass. How then could a canal which has no current prevent the formation of a bar at its mouth? Not only would such a bar be formed, but the canal itself would be filled up by the deposits from water so full of sedimentary matter, as that of the Mississippi. Besides, the main channel of the Pass being deprived of the quantity of water necessary to keep the canal in operation, its velocity and scouring power would be diminished, and consequently its deposits on the bar increased.

Thus what is proposed as an improvement would, if carried out, destroy even the present navigable capacity of the Pass. Such a measure would be

the more to be deprecated, inasmuch as the Southwest Pass is easily susceptible of improvement at a comparatively small expense.

In the report of the board of engineers, in October 28th, 1852, to the secretary of war, it is stated that all experience of these passes has shown that the depth on any one bar is greater, as the volume of water discharged by the pass is increased. From which we may reasonably infer that judiciously increasing and confining the mass of water, and correcting the course of the current is the best mode of dealing with the Southwest Pass. In order to prevent the river from overflowing its banks in time of a flood, the proper means are to substitute a straight and shorter channel for a crooked and lengthened one, and to confine the waters within a single channel of the smallest normal breadth, so as to increase the velocity of the current, and facilitate the discharge of its waters, which would gradually result in producing a more regular inclination of the surface of the water, and a more uniform velocity and depth. Cut-offs are, therefore, highly beneficial to all the great interests of life and property, as the rich alluvium of the Mississippi valley, for they expedite the discharge of the water and lower its level. The lateral outlets should be closed, and the whole volume of water in the river confined to the main channel, and where the channel is divided by sand banks or islands, all but the straightest should be closed. Thus, the channel of the river being regulated, both as regards its direction and the area of its cross section, the river would be enabled to bring its whole scouring power to bear upon the bed, which by lowering the bottom and keeping it clear would increase its navigable capacity; while the greatest velocity being in or near the middle of the current, the banks would be less subject to abrasion, and all obstructions in the bed being removed, the increased velocity would facilitate more rapid discharge of the waters in time of flood, and lessen the danger of overflow; for, if a volume of water of 500,000 cubic feet passing with a velocity of 4 feet per second, through a channel of 2,500 feet in width, will require a mean depth of 50 feet, the same volume of water, if the velocity were increased to 5 feet per second, would only require, in the same condition, a mean depth of 40 feet. That is, by increasing the velocity from 4 to 5 feet per second, the surface of the stream would be lowered 10 feet. A concentration of the power of the stream must necessarily increase the sectional area by a greater depth. The correction of the river would also shorten the duration of high water in time of a flood; thus, of all the means to be used for improving the river, or lowering its surface, the most important is the removal of whatever obstructs the free discharge of its waters.

Every facility should also be afforded to the tributary streams to discharge their waters into the main river as rapidly, and at an angle downwards as acute as possible, having the bed of the main river properly regulated, and its sides secured against abrasion, an additional quantity of water will create and maintain a greater depth and afford a freer vent for the rapid discharge of the water, thus lowering the surface in time of flood.

The reduction of the quantity of water in a river by lateral outlets is attended by a diminution of its velocity, and, consequently, of its scouring power, not merely in proportion to the quantity of water so abstracted, but in a far greater degree; for instance, if it would require a four horse power to hold a submerged body at rest against a stream flowing at the rate of two feet per second, it would require a sixteen horse power to hold it against one flowing at the rate of four feet per second. The most important advantage of confining the water in a single channel consists in producing a greater depth, and consequently a lowering of the surface of the river.

Crevasses have the same injurious effect as lateral outlets. The elevation of the bed of the river below a crevasse, which invariably takes place, not only has an injurious effect upon the navigable capacity of the river, but by increasing the obstructions to the discharge of the water tends to raise the surface of the stream still higher, and thus augments the danger of overflow.

To confine by levees the waters of a river, whose course is circuitous,

and the discharge of whose waters is impeded by abrupt bends, islands and shoals, can be useful only as a temporary expedient. For, as long as the defects in the channel of a river are permitted to remain, the bottom of the channel continues to rise from the constant deposits, until, at last, the surface of the water attains a height in time of flood, that renders it necessary to raise the levees still higher. In the erection of levees it would seem as if there were no object in view, except the immediate interests of the adjacent cultivators of the land. The levees are erected to secure them, at least for the present, from the danger of overflow, while nothing is done to remedy the defects in the river, by removing the obstructions which impede the free and rapid discharge of the water, and cause it to rise so high in time of flood. So long as the defects in the channel of a river are permitted to remain, the evil consequences resulting from them, will continually increase, and the condition of the channel become worse. Every year the shoals and sand bars will be extended and enlarged, while the bends of the river will become more abrupt. The velocity of the current and the depth of the water not only cease to be uniform, but are liable to constant change, so that navigation becomes uncertain and dangerous, while the steadily growing obstructions in the channel impeding the discharge of the water more and more every year, have a constantly increasing tendency to force the water to rise higher in time of flood. Thus, while the system of levees is adopted ostensibly with the view of protecting the agricultural interest, it is, in reality, as injurious to it as to any other interest connected with the river; for so long as the system does not affect the causes which have produced the defective condition of the river, and they are permitted to continue their ruinous effects upon its channel, the agricultural interest is subjected to the loss of time and labor, every year abstracted from its own legitimate objects, and is periodically exposed to the anxiety, suspense and fear resulting from a threatened crevasse.

The natural tendency of water in a river is to remove all detritus or alluvium to the deep waters of the sea. In a straight river of uniform breadth and cross-section, and where the line of current is in the middle of the channel, the height of water in time of a flood is a minimum, as well as the duration of high-water in time of a flood. Our efforts should, therefore, be directed to render the bed of the river as straight as possible, and to make the dimensions of cross-sections correspond with the discharge of the water. This being done, the action of the water will effect what is required for its future improvement. Thus, the most feasible mode of preventing overflow is to regulate and correct the bed of the river to that form which shall afford the most direct course, oppose the fewest obstacles, and render the least possible friction to the flowing water.

ALBERT STEIN.

MOBILE, February, 1868.

MOBILE RIVER IMPROVEMENT.

THE essay of Mr. Stein on the improvement of this river is founded upon experience and knowledge of that which is treated of. We may take occasion, however, to say that the bar impediments of this river may be best counteracted by taking the rail down to deep water, and transportage over it without drayage or lighternage. It will involve, perhaps, the cost of twenty miles more of railway, but it will carry out all large cargoes, or fill out cargoes which have been loaded at the wharves, down to the depth of the bar. The citizens of Mobile must become reconciled to through freight and fast time, as other cities have been. Whenever Mobile shall see that through trade is better than no trade, she will pass her share of Western produce in exchange for tropical products, and furnish the coal of the Wasa and Tombigbee to supply the steam marine of the South Seas. Possibly it may not

be given to the men of Mobile to see this just now, but it will be made manifest in the future. Just as the Baltimore and Ohio Railroad runs to deep water below Baltimore city, so will the Mobile and Ohio Railroad seek a similar terminus in the waters of Mobile Bay.

IMPROVEMENT OF THE MOBILE RIVER.

The Mobile river is formed by the confluence of the Alabama and Tombigbee rivers, after the junction of which it flows in a southerly direction to Mobile, which is situated about thirty miles from the Gulf of Mexico. The mass of water brought down by the river, besides the main channel, forms three others, the Tensaw and Spanish River and Pinto Island Pass. A mile below Pinto Island Pass, on the west side of the main channel, is Choctaw Point, a promontory projecting eastward, which turns the line of the current of the river from a southern to an eastern course across Choctaw bar.

The Tensaw river, opposite Blakely, divides into the Tensaw and Apalachia rivers, the former taking a westerly, the latter a southerly course. The Apalachia, near its mouth, at the head of the bay, again divides into two branches, one of which takes a westerly, the other a southerly course.

The waters of Spanish river and Pinto Island Pass, flowing south, meet with the waters of the Tensaw flowing in a westerly direction, and with the waters of the Mobile river flowing in an easterly direction, and, taking a southerly course, flow over Dog river bar with a momentum much impaired by the conflict of currents coming from so many different directions.

The State of Alabama or the Government of the United States of America has the property of the soil in the Mobile river up to high water mark of ordinary high tide; and its channel, comprised within these limits, is subject to any regulations which the Government may think fit to make. The right to the use of the shores is incident to that of the water for the purposes necessary to the navigation of the river.

In Europe the material principle to be observed in the navigation of tidal rivers is, that no person shall be allowed to erect works on or in the channel which may have an influence on the current or its course, or the stage of the water, without the permission of the Government; the channel or alveus or the bed of the river up to common high water mark being public property.

No disposition to undertake the charge or management of the Mobile river was shown by the State of Alabama until the legislature in the session of 1859 and '60 passed an act for the improvement of the bay and harbor of Mobile. Yet notwithstanding that act, owing, I presume, to the state of the country since that time, the river still remains in a state of nature.

The improvement of the Mobile river is a work of national importance, requiring both scientific knowledge and practical skill, and the undertaking of such a work should be preceded by hydrometrical measurements and observations.

The Mobile river has formed its bed according to its fall and quantity of water, and the character of the soil through which it passes has determined its width and depth. That the fine sand and mud, or stratum of silt, in the Mobile bay can be easily removed, is evident enough from the fact that it is found where it is. It was originally brought down by the upland water and deposited where it now lies by the action of the current alone; and experience has proved, in too many instances to leave room for doubt, that the same power that brought it there, if properly regulated and directed, can remove it, without having recourse to expensive dredging operations. The efforts of an increased scourage upon such a soil would soon become apparent in a greater depth of water. The tide on the ebb, as well as on the flood, would flow more freely in a deep than in a shallow channel; the resistance to the motion decreasing with the deepening of the channel, and the concentration of its waters, because the retarding forces result principally

from the adhesion of the water to the bed on which it flows. The first cause of the current on the ebb is the sinking of the tide at Mobile point, which does not exceed here fourteen inches at ordinary tide.

The deep water track, or sailing channel, takes from above Choctaw point an easterly course across Choctaw bar, when it falls in with the conflicting currents of the Tensaw and Spanish rivers, and of Pinto Island Pass. The effect of this meeting upon the Mobile river is to confuse its action and decrease its scour. These opposing currents cause eddies and crosssets, consequently a diminution of momentum, and thereby greatly impair the action of the water in its course. This evil can only be removed by correcting the course for the current.

To remove the obstructions to the navigation by dredging would only be a partial or temporary measure, for they would always be replaced in a short time after they had been removed, so long as the volume of water and course of the current continue in their present condition. It is impossible by this plan to make the navigation of the river permanent or complete. The hand of man is only required to guide and assist the natural action of the current.

The regulation of the river should not interfere with the capacity of the tidal basin; that is, should not reduce the cubical contents of the tidal water at present admitted into the river. But on the contrary, should be so directed as to increase the quantity so as to prevent any injury to the outer bar.

The contraction of the bay has been prescribed as a means of improving the navigable depth, which, in my opinion, it would not do unless the bay was entirely done away with. But while the contraction is an inroad upon the superficial extent of the channel, it is also destructive to its power, by decreasing the quantity of the backwater on which the depth of water on the outer bar depends. Not a fraction of the estuary or bay is useless for the maintenance of the depth of water on the outer bar. The greater the amount of water entering the bay or river in the interval between low and high water, the stronger the current on the ebb; and the less the quantity, the weaker the current on the ebb, and scourage also. If the smaller quantity, by the agency of the above mentioned works, is made to scour the channel between them—even deeper than is necessary for vessels of the largest size, it would not increase the depth of water on the outer bar, but unquestionably decrease it and form a practical injury to the navigation. The most effective means of lowering the outer bar is to increase the power by admitting into the river the greatest possible quantity of tidal water. There is no cause which operates more extensively to injure the outer bar or entrance from the gulf to the bay than excluding the tidal waters from soil below the level of high water, which serves as a natural reservoir for the flood tide, and is the means of affording a valuable scouring power during the ebb. The great and expensive works that have been erected in other countries to obtain a sufficient back scour of water may be fully appreciated by referring to the artificial reservoirs of water with sluicing gates attached to many of the harbors of Continental Europe. They prove the great benefits that have been derived from the power of back water scourage in deepening harbors, and also in afterwards preserving and maintaining the depth obtained.

By regulating the channel of the Mobile river, and gradually obstructing the discharge of water through the lateral outlets, an amount of back scouring water could be concentrated of sufficient volume to afford at all times an ample depth and breadth for the purposes of navigation.

Having corrected the disordered state of the channel of the Mobile River, from the junction to the head of the bay, and thus affording a free passage to the land and tidal waters, the unrestrained action of the increased volume of water on the ebb would not be confined alone to the upper channel of the river, but it would cause an increase of depth throughout the bay and over the outer bar. The good results of such an undertaking, carried out with energy, and directed by a practical hydraulic engineer, would be apparent in a very short time.

The riparian owners, whose titles extended to the margin of the river at ordinary high tide, impressed with the belief that their rights extended to the line of current or Thalweg, put up wharves projecting at right angles from the shore, which caused the deposit between them of the sedimentary matter brought down by the river. After a while the outer ends of the wharves were longitudinally connected, so as to exclude the water and to convert into land what before had been covered with water. As the filling up of these slips by the river deposit was too slow an operation, it was assisted by the occupants of the wharves, that is, they now filled up with ballast and other matter and formed into land. This formation of land is carried on still on both sides of the river without any interference from the Government. Before wharves were built on the opposite side of the river, the stream was at liberty to preserve or enlarge its width, but it is now rendered powerless. A very leading question in the consideration of this subject, is whether, and to what extent the irregular contraction of the channel of the river affected the upward flow of the flood tide, and the accumulation of the back water in the river, and also how it affects Choctaw bar and the width and depth of the river as well as the line of current. Singularly enough, no marginal line has ever been prescribed for the channel of the river, nor has there ever been a permanent water gauge established. To supply materials for correctly ascertaining the information above alluded to, is one of the objects of the recommended hydrometrical surveys and observations.

Mobile is dependant, as far as natural means are concerned, upon the back water for its harbor. Every foot taken from the river by the wharves abstracts so much water from the river, and no matter how slightly the quantity of water that passes through the channel of the river at Mobile may be diminished, it inflicts a practical injury upon it. The greatest care therefore should be taken that the water way is not encroached upon.

The chief obstruction to the propagation of the tidal wave is a contracted channel, and yet the occupants of the wharves question the authority of the Government to oblige them to restore to the river the tidal water of which it has been deprived by them. Besides that the wharves diminish the water way, check the free flow of the water, impair its strength, and thus permanently diminish the depth of water above and below them. They are also the means of increasing the discharge by the channel of Spanish river.

The wharves being an encroachment upon the superficial extent of the river, are destructive of its power by decreasing the quantity of tidal water received at the flood, and consequently the volume of back water returned on the ebb. In fact it is no longer the same river. It has been confined between narrow limits. The occupants of the wharves have been allowed to advance them at random towards the line of current or mid channel without any regard to the navigation. From the injudicious and reckless manner in which the wharves have been constructed and extended out into the channel of the river, one would suppose that they were designed for the purpose of silting, and as a preparatory step towards the entire exclusion of the water. This practical effect cannot be denied; therefore, as the wrong has been committed by the riparian occupants themselves they are less entitled to sympathy from the public. It is to be regretted that no means have ever been taken to check their proceedings, that no public notice has ever been taken of them. But the use of and enjoyment of wharves for any length of time does not create a title by prescription. The water of the river had possession too long to be legally ejected. It appears, also, that the Government has given no grants and charters by which they could claim the soil of the Mobile river, or any part of the soil of the bay up to high water mark of ordinary high tide.

To remedy the evils which may have resulted from the erection of the wharves, it is natural that we have to struggle with prejudice as well as self-interest.

ALFRED STEIN.

MOBILE, January, 1863.

ART. XI.—DEPARTMENT OF IMMIGRATION.

THE IMMIGRATION PROJECT—PUBLIC MEETING AT MASONIC HALL.

IN response to the call of the committee appointed by the Chamber of Commerce on Monday evening, brief as the notice was, Masonic Hall was filled last night with citizens, assembled to hear the plan explained by which it is purposed to direct to the South an industrial immigration from Europe. The larger part of the assemblage consisted of business men, most of whom are long established merchants and financiers in New Orleans, and all gave earnest and constant attention to the observations and suggestions of the speakers, particularly those of Mr. John Everitt, of the London house of Everitt, Lucas & Co., a firm which Gen. Richardson informed the audience is influentially and extensively connected, in monetary operations, with leading financial establishments in Great Britain and on the Continent.

Dr. J. S. Copes, chairman of the committee deputed to make arrangements for the meeting, called the assemblage to order at about half past 7 o'clock, and nominated for chairman Mr. Thos. A. Adams, president of the Crescent Insurance. The nomination was unanimously approved, and Messrs. T. D. Miller, J. H. Oglesby, A. H. May, C. H. Slocumb, Wm. DeLarue and L. J. Webster, were chosen secretaries.

The meeting being organized, Mr. Adams introduced Mr. Everitt, who was cordially greeted from every part of the house. He spoke for about half an hour, expressing himself substantially as he did in his address to the Chamber of Commerce, an abstract of which was given in the *Crescent* yesterday, that presented all his leading ideas on the subject, on which he was discoursing, and which in skeleton form may be thus stated:

The British press receive their intelligence as to the condition of the South from Northern newspapers, and through their press the masses of the British people are impressed with the belief that the South has been utterly wrecked by the war, is in a state of social and political anarchy, the inhabitants abandoning it and emigrating to other lands. This was the idea he had himself before going through the Southern States. He had discovered that he had been totally misinformed; that this is one of the most inviting countries in the world to the European emigrant, in soil, in climate, in mineral productions, in every element that can raise a nation to the highest degree of prosperity in agriculture and manufactures. The first step necessary is to disabuse British people and British capitalists of their erroneous ideas, and he will assist in doing it.

No more money will be sent here by European capitalists to assist in cultivating large plantations, for the system is regarded as certain to fail.

The description of immigrants that ought to be attracted hither are industrious men, with small means, say four or five hundred pounds sterling, and to secure such an immigration, opportunities must be afforded them to buy lands which they can farm, and they must have assurance that they will be met when they land by some association that will advise and direct them for the best and will protect them from land sharks and land runners, and from every other imposition that may be attempted to be practiced upon them on their way to their new homes.

To attain this end Mr. Everitt thought the organization of co-operative land associations in each of the Southern States would be a great instrumentality.

[In the course of his speech, Mr. Everitt adverted to a misconception of his remarks in regard to Southern railroads in the report of his address to the Chamber of Commerce, published in the *Crescent*. He was represented as saying that the Southern railroad system was the best he knew. He explained last evening that he had reference to the street railroads in New

Orleans, which, he said, were the best managed he had ever seen. As to the general railroad system of the country, he was greatly surprised to find such an extensive net work of railway, and he thought the structures and equipments very good, all the circumstances of the country considered, but it would be exaggeration in him to say the roads were better than, or as good as those in Europe, where railways are so durable and so systematically managed.]

Gen. Richardson spoke after Mr. Everitt, going into a history of the origin and progress of African slavery, and showing that the institution was established on this continent by England and was fastened upon the South by the North. The South was the vicarious sufferer for the guilt of others, in manfully and openly struggling for the maintenance of a system forced upon them originally. With all the disastrous results of the war, Gen. R. had an abiding faith in the recuperative powers of the Southern people, and with their soil, their climate, and their boundless revenues, there was no reason why they should not again become great and prosperous. He explained that it was through his persuasions Mr. Everitt was induced to visit the South, and although the plan for its regeneration suggested by Mr. E., differed from his own original projects somewhat, he fully concurred in it and would recommend its adoption throughout the South. Influential and responsible gentlemen in Mobile had already taken hold, and were working to form an extensive organization throughout the State of Alabama. A part of the plan was in connection with such organizations to establish a bureau somewhere to systematize the transportation of immigrants and protect them from sharpers, and although the location of this bureau had not been decided, he thought the situation of New Orleans, at the entrance of the great river that, with its branches, permeates the Mississippi valley, would command the institution. Gen. Richardson's remarks were frequently applauded.

In the course of his speech he read the following as the circular which is to be addressed to land-holders in the several States, and which gives an outline of the organizations proposed to be formed:

"We beg to call your attention to a proposal made with a view to assist in the cultivation and development of our land, and its resources.

"It is presumed that the two things required are labor and money; and it is believed opportunities present themselves to secure both of these requirements in the same person; there being a large number of persons, with small means sufficient for the cultivation of small farm-holdings, looking for such opportunities, as we can offer, all over Europe—especially in Germany, England, Scandinavia, and other countries.

"The proposal is, therefore, that owners of land shall form themselves into an association, under the general laws of the State, and such special legislations as may be needed; putting in their lands, at their present depreciated value, by well qualified assessment, and receiving for them fully paid-up stock of the company.

"The articles of association, by which those proceedings will be regulated, will take power to purchase, sell, rent, lease, cultivate, improve and otherwise deal with their lands, in a general way; also providing for the borrowing of money by mortgage, but not more than one third of the assessed value of the lands belonging to the company.

"The trust deed of such mortgage providing that such moneys so raised shall be applied only in the improvement of the lands, rivers, water courses, repairing of levees, etc., and the necessary expenditure of the company legally, managerially, and otherwise.

"It is proposed that the company shall be called 'The National Freehold Land Company of Louisiana,' or whatever State the company is organized in.

"It is desirable that the lands should be healthily located, easy of access, and as ready for culture as possible.

"Believing that this course is a safe and practicable one, giving the land-

owner an interest in the improvement of the lands he contributes, and correspondingly increasing the value of all he may have besides, and securing the immigration of intelligent people of some means—the thing our country so much needs—we commend it to your serious consideration.

"This plan is approved by Mr. Everitt, of Lombard street, London, whose business relations are with the monetary, commercial and industrial resources of England, and who is now making a tour of the Southern States, for the purpose of looking into the industrial enterprises, climate, soil, labor and securities of the South; and for safe and reliable opportunities, for the investment of capital, in our country; and who is quite willing, if this course is approved, and seconded efficiently by our landowners, to identify his house; and use his personal influence to make the movement successful in Europe.

"If you are desirous of being interested in this movement, we shall be glad to hear from you; and also to be informed to what extent you would like to embark."

After General Richardson, the Rev. Dr. C. K. Marshall addressed the meeting in one of his most eloquent speeches, conveying a fund of wisdom as to what the people of the South should do to help themselves out of their present distress, and illustrating his arguments with that versatility for which he is so famous, by anecdotes and suggestions that alternately moved his hearers to mirth and to serious and tender thoughts. He fully approved the plan of Mr. Everitt, and is about to aid in canvassing the State of Mississippi in favor of it.

The speaking concluded, Mr. Samuel H. Kennedy submitted the annexed resolution, which was unanimously adopted:

"Resolved, That the president of this meeting appoint a committee of twelve citizens, whose duty it shall be to prepare a circular letter, addressed to the people of Louisiana, Mississippi, Arkansas and Texas, setting forth the views presented to this meeting this evening, and inviting their co-operation; and if the response, in the judgment of said committee, is deemed favorable, said committee are desired to take the necessary steps to organize an association by which foreign white immigration shall be encouraged and invited to come and occupy the vacant lands of the South."

The chair nominated for the committee provided by the resolution the gentlemen named below, and the meeting, without a dissenting voice, approved the nominations:

Samuel H. Kennedy,
Judge John N. Lea,
W. S. Pike,
Jacob U. Payne,
Gen. G. T. Beauregard,
S. B. Newman,

Dr. J. S. Copes,
John Chaffie,
Moses Greenwood,
Wm. M. Perkins,
Alfred Moulton,
C. T. Raddecke,

The meeting then adjourned. Mr. Everitt, Gen. Richardson and Dr. Marshall start for Mississippi this morning, to obtain the co-operation of land-owners in that State.—*N. O. Crescent.*

HOME HELP.

WE had recently in our city a convention of well meaning and highly respectable persons laboring under the incurable insanity of believing that the restoration of Southern independence is to come from the benevolent justice of some political party at the North. We know too well the loss of opportunity sustained in the South during the war by the trust in foreign intervention, and by the fear of alienating or exasperating "our friends," so called, at the North. The radicals will never know, they certainly will never acknowledge, what they owe to those friends in the results of the war. We appreciate, however, too highly the sincerity of those who still rely upon the same agencies of restoration, for us to speak of them with disrespect. We know too well the changes wrought by the war to doubt that they will be convinced of the futility of political remedies by the failure of a foreign

party organization to restore the domestic security of the South. No foreign intervention can any more give back the South what it has lost, than a foreign power could have sent men, food and munitions across the Atlantic to aid the Confederate cause. It is the misfortune of the South, that it has relied upon similar assurances to the neglect of those individual and associated efforts which are alike indispensable and adequate to the great object indicated.

In the earlier history of Virginia may be read a narrative of a colony, seated on a rich soil and in a genial climate, looking day after day for the arrival of a ship load of provisions. A timely and energetic use of the native resources which surrounded these colonists, would have saved them much suffering and made them independent of all future food supplies by sea.

Another public and far less pretentious meeting was held on Tuesday night last. Its object was to encourage immigration. It assembled in response to the request of eminent capitalists, who desired to afford aid to the South upon a basis of a safe and profitable investment for themselves. The success of this enterprise very properly depends upon our own sense of its importance, and the complete organization necessary to justify the proposed aid. The steps taken by the meeting, and the men appointed to report, afford a guarantee that the South will do its part of the necessary effort, and this is what we have called "Home help."

We have nothing to add on the importance of having more wealth and numbers. Every one admits their value. It is proper, however, to mention one result of a successful effort in this direction. We do so because it is a direct evidence that such practical measures will achieve an object that mere party organizations cannot. The introduction of numbers and capital will enable the people of Louisiana to control their own political destinies. It will relieve them alike from domestic disturbance and from distant intervention. It will build up whatever of political rights they may in future possess, upon the impregnable foundations that support the same rights in Ohio, or in New York, or in Pennsylvania—the power to rebuke those intruders who may intermeddle with them. We repeat that everybody wants immigration. Europe is groaning to be delivered of thousands, who will flock to America that their condition may be improved. When, therefore, both parties stand willing to co-operate in a common object, it becomes important to examine the obstacles which may have heretofore prevented their success.

To examine these obstacles is (with the aid of the intelligent patriots who are now interesting themselves in the subject) to remove them. 1. The immigrant coming to the South and West by way of New Orleans should be protected and conveyed to his new home with exactly the same advantages that are afforded him in New York. These are: 1st. An immigrant depot. 2d. Protection of a State and Federal agency. 3d. Facilities for reaching interior homes by the cheapest, safest and most direct means. 2. The supply of good lands, at low prices, in large quantities, and on undoubted titles. There are few persons who have not been practically engaged in the sale of lands to immigrants, who appreciate the importance of an organized system of private land titles. The American land system, by which natural boundaries were discarded for astronomical lines, and by which the right to enter any quantity of the choice lands that the speculator might select, was substituted by the sale of small parcels at low and fixed prices, has done more for American progress than any one practical institution.

All the Atlantic States were settled under old crown titles. The best lands were in large bodies, and a small holder was compelled to risk the soundness of title to the whole tract of which his farm was parcel. Under this system an immense extent of Western Virginia was held by absentees, and the land titles were in a condition so precarious that immigrants passed by and took their wealth, numbers and energy to lands further from market

and less valuable. Of course the passage of the gift-land acts, and the increased facilities furnished by railroads and canals, tended still more to turn and confirm the current of immigration in this chosen channel. The great obstacle which first diverted this current from the Atlantic States, was that which we have stated. Now, in seeking to counteract the attractions of the great West, and to assure ourselves in the South a share of this true wealth of nations, it will become necessary to organize such a consolidation of private lands as will meet the competition of the Federal land-offices, and the sales of railroads, collegiate and other corporate land-holders.

The mode in which this can best be done may be stated thus: 1. All persons wishing to sell lands must associate themselves, consolidate their lands according to a just assessment of value, and take shares of full paid stock in the incorporated association, in place of, and to the extent of their several valuations contributed. The private titles must be free from all mortgage or other liens, whether of record or tacit, and this must include, of course, release of dower. There will be many cases in which parties are willing to subscribe encumbered lands. Good land lawyers can generally suggest modes by which the *cestui que trust*, or other incumbrancer, will unite in a consent proceeding, under which the purchase money of the encumbered estate shall be accepted as a substitute for the title lien. Such arrangements will be indispensable to place many of our best sugar and cotton estates in market. We suppose then the title to all the lands thus described conveyed to the president and directors of the land association.

A direct conveyance from them will afford an unquestionable guaranty, and will stand next, if not equal, to an original grant from the sovereign holding eminent domain and conveying proprietary titles. 2. The price of these lands. This might be fixed by any impartial valuation, but should be made to conform to—that is, not to exceed—the tax assessments of the same lands. The interest of the association will, however, provide against excessive valuations, for it will always have the great competitors we have mentioned to contend with. We will suppose, then, that these important elements of attraction have been provided for. Then there should be in New Orleans a registry of private land titles, under the direction of competent officers, and subject to the inspection of the public, upon payment of a small office fee. The registry should still copy the Federal system. Not only should publications issue, explanatory of local advantages, but minute maps of the tracts and districts should designate the cleared and forest land, the mineral deposits, water power or village sites on each tract, with the distance from and modes of communication with market, the social conveniences of churches, schools, villages or cities, etc.

The proper organization then of an Immigrant Bureau, supported by the States interested, and by the Federal agency of which we have spoken, with an organized system of private land titles, will give the immigrant something like the same assurance that he derives from the Federal and State Governments offering public or corporate lands. The gentlemen charged with reducing the present movement on this subject to practical effect, will readily see what is necessary, and can devise such a formula of associate organization as will meet the exigency and obviate the difficulties of individual and isolated effort. This agency on their part is what we call home help, and we are confident it will effect for us far more than foreign intervention, political or military.—*Commercial Bulletin*.

EDITORIAL NOTES AND CLIPPINGS.

WITH the February number of the REVIEW the connection of the undersigned with it, as acting editor, came to a close. As early as November last, finding that the duties of the position, however pleasant, were incompatible with other and more important cares, he made known to the proprietors his desire that he should be relieved, and though at a later day he was prepared to change his decision, negotiations had already been consummated which have secured to the REVIEW the riper talent and the maturer experience of its present editor-in-chief. In closing his brief editorial career, the writer begs thankfully to acknowledge the warm encouragement received from many of the oldest patrons of the REVIEW, encouragement which relieved his labors in many important particulars, and rendered the sense of his inexperience far less oppressive than it would otherwise have been. That he labored, if not always with good judgment, at least zealously for the promotion of the material prosperity of the South, the various divisions of the work devoted to her industrial and commercial interests will abundantly prove, and he has the satisfaction to know that some of his suggestions have been adopted in certain quarters with good results.

It is due to Mr. Barnwell to state, that not a line from his pen has appeared in the REVIEW since the death of Mr. De Bow, except the biographical sketch of the latter in the double number for July and August of last year, and therefore for all faults and shortcomings, the undersigned is alone responsible.

EDWIN Q. BELL.

NEW YORK March, 1868.

TO THE PATRONS OF DE BOW'S REVIEW.

THE writer has been called to conduct this well-known periodical. Assuming that the doctrines of the REVIEW represent the creed of the South, it becomes alone a practical question how best to give effect to the common convictions. The past is with those who write history; the present is for those who make history. We must roll a stone against the sepulchre of our hopes and look to the transfiguration of the future. The new dispensation has imposed new duties. It has inspired new resources. The effort to secure the control of the South in the hands of its sons by force of arms has failed. We accept the fact of failure without appeal. We will accord to the emancipated negro all the legal rights to which his new relations entitle him. This will be done in good faith and with perfect sincerity. We will also keep faithfully the renewed allegiance pledged to the Federal Constitution. We have neither motive nor purpose of disunion. We are satisfied that the South can best work out its temporal salvation under the Union. We give, therefore, the guarantee of interest upon the pledge of faith. But we have duties of the utmost moment to ourselves and posterity. Shall we abdicate the station to which centuries of civilization has assigned us? Shall we abate our honest efforts to rebuild those social dykes which revolution has broken? We cannot pause. If we falter or quit the field, our subjugation below our former bondsman is complete. It is the paramount duty of every Southern man to work sil-

ently, resolutely, honorably for the social and industrial reconstruction of the South. To effect this laudable object we must employ new agencies. These agencies are taught and warranted by the highest examples of civilized Christendom. They are in perfect and praiseworthy accordance with our fidelity to the Federal Constitution. If numbers are acknowledged to be the exponent of rights in the Union, the South must acquire numbers. If accumulated capital and perfected industrial skill are recognized as elements of political influence, then must the South adopt measures to acquire these indispensable attributes. With these objects we should discourage emigration from the South. And this, whether it resort to the North as a stronghold from which to prosecute a political warfare, or, with the noble desperation of Sidney, sacrifice the ties of country and kindred in unavailing enmity to a tyranny it could not overthrow. To induce our own people, especially the humbler classes, to remain at home we must enable them to do so; we must also attract additional numbers and capital from abroad. Both these measures will imply the employment and improvement of the people. They will imply the intellectual, physical, and industrial development of all our resources. The rule of ignorance can only be controlled by superior intelligence. The tyranny of rude and unreasoning labor can best be resisted by new dynamic agencies, and by mechanical substitutes for manual power. The iron sway of a sectional majority may be only counteracted by industrial independence, and by sinking old and immaterial issues. All new issues should be based on the stratification of inter-

ests which underlie all American society, rather than upon the geographical separation, which, under other relations, constituted the divisions of the American people. We must in future desecionalize the issues. In doing so no one can predict where the sceptre of this inevitable and irresistible majority will be held. Not impossibly its potent badge may sometimes rest on Southern bosoms.

To aid in preparing the South for this future will be the province of the REVIEW. It will be the agent and advocate of education, agriculture, foreign and domestic commerce, the mechanic arts, and immigration. It solicits the aid of all interested in these subjects. To such contributions will be added eclectic materials, compiled from the standard records of moral and scientific progress throughout the world. In thus appealing to the men of mind and movement in the South, the writer has but one word of personal concern. He has advised that the REVIEW be domiciled in the South, because he knows that some such representative of Southern interests is indispensable. This has been done. It will furnish the highest additional testimonial of its fidelity to the pledges upon which it was founded. It returns to the place of its nativity, and if it cannot relieve the sufferings of the South will, at least, share them. The writer submits the REVIEW to the public. They can judge better by the product of the work than by the professions of a prospectus how far he can execute the responsible task he has undertaken.

WILLIAM M. BURWELL.

NEW ORLEANS, La., Office of the REVIEW,
January, 1868.

OUR BOOK TABLE.

Messrs. Charles Scribner & Co. send us, 1. *The Old Roman World, the Grandeur and Failure of its Civilization.* By John Lord, LL.D., pp. 605, price \$2 50.

We have but glanced over this valuable volume, reading here and there a chapter, but have seen enough of it to assure our readers that it is in the highest degree reliable and attractive. Dr. Lord's style is pre-eminently nervous, and he carries you with him at a rattling pace along the long line of splendid victories that swell the robber band into countless and irresistible legions, and converts the little hamlet on the banks of the Tiber into a city of such grand proportions, such boundless wealth and such limitless sway, that a prostrate world seems scarce wide enough to comprehend the grasp and scope of her imperial ambition. The rapid survey in Chap. III. of the wonders of Ancient Rome, its palaces and temples, its countless monuments and statues, columns, arches, battles, tombs, and gardens, is an array of statistics which we read in breathless astonishment. Graphic throughout, instructive, entertaining, and in its concluding chapters profound and philosophic, no better text book could possibly be devised for the higher schools and colleges, and we cordially commend it for this useful purpose. The lover of classic literature will likewise welcome this volume as a valuable addition to his library.

2. *Eighty Years of Republican Government in the United States.*—By Louis J. Jennings.

The thoughtful letters of the author to the *London Times* have attracted deserved notice in this

country as from time to time they appeared in that famous paper. The present volume is a more elaborate presentation of his views, and is written in the same unprejudiced vein that marked his series of letters. A calm survey of things as he found them seems to have been the aim, as though the writer felt that the mirror thus held up to his people and to ours would reflect an image requiring no burnt cork wrinkles or rouge-gashes to increase the hideousness of its outlines. We can fancy a reflective John Bull closing this little volume and cursing the radicalism of John Bright with true English emphasis. "The ignorant will choose the ignorant to represent them," says our author on p. 131, and let Mr. Bright succeed in his designs, says Mr. Bull, and the House of Commons will soon fall to the level of these spoon-thieves and speculators in office.

An American must blush as he reads this truthful picture of the venality of our public men and the decline of national purity. We hear a good deal of well-meaning bosh about the events of the last few years having "put back for a half century the progress of Republican Institutions." The truth is that republican institutions have no continued progress. They are best and most solid in the bud; the full blown flower intoxicates by its beauty and its fragrance, but *apris*—all processes are those of decomposition and decay. Those Republics are most enduring that, like little Switzerland, stand still. Progress is most fatal to democracy. The vital principle is unequal to the mushroom growth of the governing power, the muscles weaken as the frame expands, the crimson current grows thin and

watery as the conduits lengthen, and national dissolution follows unless some galvanic stroke startles it into life under Imperial auspices.

3. *Fred and Maria and Me.* By the author of "The Flower of the Family." \$1 50.

This beautiful little volume is charmingly illustrated by W. Magrath, and is gotten up throughout in splendid style. Send for it for your young folks and win their gratitude for your thoughtfulness.

Several valuable works have reached us which will be properly noticed in our next.

The March numbers of all the popular magazines are at hand, all well filled and admirable in their several provinces.

SUN PICTURES.—*How Daguerreotypes can be enlarged.*—The improvements in the art of photography in the last few years are exciting much attention. In every branch of the art, mechanical, manipulative and artistic, many important inventions and modifications have been introduced. The exceeding interest attached to all its operations has attracted the attention of superior scientific men to the art, and its progress has been rapid. Of course, with the development of its practicability and the multiplicity of its applications has followed an increase of its commercial value, and a number of strong business houses have grown up with the advancement of the art. Probably no one house combines greater facilities, or has introduced more improvements than that of Mr. Rockwood, 839 Broadway. Mr. Rockwood is one of the oldest (in experience) photographers in the country. Being connected with it from almost its first

introduction into this country, he brought to his aid a thorough knowledge of artistic portraiture, mechanical skill and an enthusiastic desire to advance the art. He was the first to make the Carte de Visite in this country; the first to introduce the beautiful style known as "Vignettes;" the first to successfully introduce life-sized photographs untouched by artists, and yet good enough to make a satisfactory portrait, at a cost of only ten dollars.

Enlarged copies of Small Pictures.—Many people have, in old and fading daguerreotypes and other small pictures, the only portrait or likeness of deceased and absent friends. These pictures can be successfully copied into life-size portraits, and finished in a style of excellence and fidelity to the originals, that is remarkable. Some years ago Mr. Rockwood appreciated the importance of this branch of the business, and gave the most earnest attention to perfecting it. After a series of careful experiments, he devised a copying apparatus with which he succeeded in enlarging daguerreotypes or *cartes de visite* up to any size required, with an accuracy in the highest degree satisfactory. Carefully selecting the most skillful artists to finish the pictures, he has built up a business in this specialty which brought him patronage from all parts of the Union.

Photographs without the Use of Chemicals.—Many of our readers may have noticed a peculiar yellowish brown, or, so to speak, "leathery" tone to what are called photographs in oil-colors. This is owing to the fact that the chemicals ordinarily used in photography form a very unstable compound with the oil and

turpentine of the canvass; the consequence is, a powerful organic reaction takes place after the colors are applied on top of the chemicals, and generally the portrait is either ruined or much injured. As early as 1858 Mr. Rockwood invented a little apparatus which at once overcame the difficulty. In a moderately lighted room, with a southern window, he arranged in the window a combination of lenses, condensing and acromatic, which could be called a species of Camera Lucida or magic lantern. In this apparatus he places a glass "positive," either from life or copied from a carte de visite, and projects upon the canvass a beautiful and clear image in bright sun-light. The artist sitting a little one side of the canvass, carefully traces with fine brushes or pencils the lines and forms of light before him, and makes what is technically called a "dead color." Oftentimes in less than a half hour he produces what is already an accurate map of the face, while the materials used are his own, and not liable to the dark stains that come from chemical combinations with his colors.

Having thus made his sketch with all the accuracy of the camera, he takes the canvas to the studio, where, with a good photograph as a guide, he completes the picture. Under all ordinary circumstances his success is certain.

We feel much interest in this beautiful art of photography, and feel assured that we are right in calling attention to that branch of it which has been made such a successful specialty in the hands of Mr. Rockwood.

THE number of colored people in New York city, which seventeen years ago was 16,000, is now only 10,000.

Among them are twenty clergymen, and an equal number of doctors and druggists, two notaries public, two rich merchants, one lawyer, fifty school teachers, two professors, twenty-five musicians, twenty shoemakers, thirty tailors, five hundred coachmen, ninety-five barkeepers, two thousand waiters, four hundred house painters, five hundred washerwomen, one hundred nurses, and twenty fortune-tellers. Two papers are published by colored persons. One claims to be a professional poet, and thirteen possess a fortune above \$40,000. There are seven colored schools, and thirty-two mixed marriages, namely, of a white person with a colored one.

THE RUSSIAN DEBT.—The Russian state debt now amounts to 1,219,443,535 roubles (\$765,000,000, on which the interest due for the present year is 73,843,505 roubles, £9,230,000). If to this are added the various issues of paper currency in different forms made by the government since 1859, the total amount of the obligations of the Russian State will be found to exceed 2,000,000,000 of roubles (£250,000,000).

HOW TO KEEP MEAT FRESH.—Simply immerse in buttermilk. This will keep it several days, when the milk should be changed, and fresh milk substituted. In this way, beef, veal, &c., can be kept for several weeks, and it will be as sweet and fresh at the end of that time as when first put in. Our butcher furnishes us with the receipt. The whole neighborhood is now saving its meat in this way. It is equally efficacious in the hottest weather. — *Rural World*.